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ABSTRACT

Drawn from a conference that addressed the role of sentence combining in the teaching of writing, the papers in this collection are divided into three sections: the theory of sentence combining, research in sentence combining, and sentence combining in the classroom. The 22 papers discuss a variety of topics, including the following: (1) sentence combining, style, and the psychology of composition; (2) the effect of sentence combining instruction on reading comprehension; (3) syntactic manipulation and scores in reading comprehension; (4) sentence combining in a comprehensive language framework; (5) developing paragraph power through sentence combining; (6) parallel sentence combining studies in grades nine and eleven; (7) multivariate analysis in sentence combining research; (8) problems in analyzing maturity in college and adult writing; (9) sentence analysis and combining as a means of improving the expository style of advanced college students; (10) sentence combining in training programs for business, industry, and government; (11) teaching the logic of sentence connection; and (12) sentence combining and composing in the classroom. The collection concludes with a bibliography of materials concerning sentence combining and writing instruction. (HOD)

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SENTENCE COMBINING
and the
TEACHING OF WRITING

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SENTENCE COMBINING
and the
TEACHING OF WRITING

Selected Papers from the Miami University Conference
Oxford, Ohio
October 27 & 28, 1978

Edited by

Donald A. Daiker Andrew Kerek Max Morenberg

Studies in Contemporary Language #3

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PREFACE

On October 27 and 28, 1978, more than 350 people representing over 100 institutions in 38 states and Canada came to Oxford, Ohio to attend the Miami University Conference on Sentence Combining and the Teaching of Writing. The conference consisted of thirty papers, two workshops, and major addresses by four invited speakers: Kellogg W. Hunt, James L. Kinneavy, John C. Mellon, and William Strong. From these presentations come the twenty-two original essays we selected for inclusion in this volume. Together, the essays on theory, on research, and on classroom applications suggest that we are only now beginning to realize the potential of sentence combining for teaching writing, reading, and perhaps even thinking itself.

Both the conference and this volume have been supported by grants from the Exxon Education Foundation and Miami University. For their generosity, we are especially grateful to Phillip R. Shriver, President of Miami University; David G. Brown, Provost; Clarence K. Williamson, Dean of the College of Arts & Science; Spiro Peterson, Dean of the Graduate School and Research; Robert C. Johnson, Chair of the Department of English; and the Office of Alumni Affairs.

Many of our colleagues in the Department of English helped organize the conference. In particular, we want to thank Conference Coordinators Patricia Sosnoski, Randolph Wadsworth, and Jack E. Wallace for their hard work, intelligent planning, and all-around helpfulness. Conference Secretary Janet Ziegler consistently amazed us by turning chaos into order. And Virginia Doerger, our graduate research assistant, helped to run the conference and to compile the index to this volume. Finally, to Douglas R. Butturff, Editor of L&S Books, our deep thanks for his encouragement and advice.

Donald A. Daiker
Andrew Kerek
Max Morenberg

PART I THEORY OF SENTENCE COMBINING

ISSUES IN THE THEORY AND PRACTICE OF SENTENCE COMBINING: A TWENTY-YEAR PERSPECTIVE

John C. Mellon
University of Illinois at Chicago Circle

Introduction

As the first national-scope professional meeting devoted exclusively to sentence combining, the 1978 Miami Conference on Sentence Combining and the Teaching of Writing marks the coming of age, one might say, of this effective and reliable type of writing practice. The pedagogy of sentence combining has grown from mere syntactic exercise performed upon individual sentences apart from any rhetorical context, to composition practice featuring the construction of whole discourses and requiring attention to matters such as transition, cohesion, tone, style, and mechanical appropriateness. But sentence combining is not a comprehensive method of teaching writing, and those who regard it as such, I fear, risk alienating the mainstream teacher only slightly less surely than were they to advocate a return to the nineteenth century slateboard and copying exercise. Obviously, I discuss this point more fully below.

My own contribution to the research on sentence combining was to begin it.[1] Reports on that beginning were published in Mellon 1967 and 1969. Since then, much additional research has been conducted. Sentence-combining instruction, as I see it, has undergone three distinct changes in form and concept, and issues major and minor have arisen demanding close attention. My purpose in this paper is to discuss these matters, analytically, critically, comprehensively. In particular, I shall present new views on the issues of learning and growth, and I shall argue for the retention of cued sentence-combining practice along with open-format problems.

Part One: The Pre-History of Sentence Combining

To start, I wish to relate the pre-history of sentence combining, stating the facts, as I remember them, about how it all began, how the idea of transformationally organized sentence combining arose in my consciousness, gradually, over an eight-year period, in response to suggestions and ideas from many persons and sources, until by February of 1965, as embodied in my Cooperative Research proposal to the U.S. Office of Education, all the apparatus of first-generation sentence combining and all the arguments of an accompanying research methodology still in use today may fairly be said, in retrospect, to have been invented.

The story begins in 1957, a date that explains the otherwise strange-seeming "twenty-year perspective" mentioned in the title of this paper. Transformational grammar, still in its infancy, was known only to Noam Chomsky and a few dozen other linguists, and no English teachers whatever. As a fledgling instructor at Culver Military Academy, I obtained from Mr. Patrick Hodgkin, English teacher par excellence, a collection of what he long had called "sentence-development exercises," which he suggested I use with my eighth and ninth graders. Each exercise began with the direction, "Combine these idea groups into one simple sentence," and consisted of six or seven short sentences listed one above the other. For example:

I tried out for the football squad.
I tried out last week.
It was the varsity squad.
I hoped to play end.
I hoped to play halfback.
It didn't matter which.

The directive "one simple sentence," I later learned, was intended to prevent serial compounding of the given sentences — the bane of uncued sentence-combining exercises when used with younger writers. Obviously the exercises excluded complex sentences, and provided no way to steer the writer toward semantically appropriate possibilities, as for example, "Last week I tried out for the varsity football squad, *hoping* to play end or halfback," and away from grammatically correct but semantically inappropriate versions, such as "Last week I tried out for the varsity football squad *and hoped* to play end or halfback." In any case, I incorporated Mr. Hodgkin's sentence-development exercises into my English courses, distributing them individually on small dittoed sheets, usually two or three a week, routinely, allocating no more than five minutes to each. Quite without knowing it, I had taken the first step on the road to sentence combining.

Four years later, in 1961, I left the classroom for a graduate program at Harvard University under the advisorship of Dr. Priscilla Tyler, who suggested coursework in linguistics at MIT, where my Chapman's-Homer experience with transformational grammar occurred. I became particularly fascinated by what the transformationalists then called "generalized," or "double-base," transformations operating on "constituent sentences" introduced into "matrix sentences." That winter Professor Tyler received galley proofs of Paul Roberts' soon-to-be-published *English Sentences*, the first school grammar to incorporate transformations. I snickered at Roberts' "source sentence/consumer sentence" terminology, but more importantly, was surprised to find that in no instance did Roberts illustrate multiple or recursive embedding (that is, two or more source (constituent) sentences entering a single consumer (matrix) sentence, since multiple embedding, the handling of many constituents within a single matrix, was clearly the hallmark of mature writing.[2]

It was then, in reaction to Roberts' book, that I struck upon what I thought was needed — the idea of "reverse parsing" exercises employing grammatically complex but mature and stylistically impeccable sentences, that is, sentences containing a great many embedded kernels in their underlying structure. Traditional parsing exercises started with a mature sentence of exemplary form, which the student broke down analytically into its phrasal and clausal parts. Why not, I asked, since generalized transformations show the derivational operations that convert sentences into their various subordinate clause and phrase counterparts, why not *reverse* the direction of parsing by giving a set of five, six, seven or more short sentences individually paired with transformational cues, directing the student to reconstruct the complex sentence from which the shorter ones had been extracted?

Apparently the idea would work if two additional items of format were provided: a device showing exactly which sentences were to be embedded in which other sentences, and, in the case of nominalization, a semantically

empty filler word demarcating open nominal slots in matrix sentences slated to be occupied by the transformed constituents. I decided upon right-spaced indentations to cue the exact embedding relations, and used the word SOMETHING, spelled in capital letters, to indicate empty nominal slots.

Thus constituted, these reverse parsing exercises were identical in form to the transformational sentence-combining problems I later used in my experiment. In that they required the writing of two or more sentences as one, they may be said to resemble not only the sentence-development activities I received from Mr. Hodgkin, but also, to a lesser extent, the exercises occasionally found in conventional grammar books.[3] The crucial differences, of course, were first, that the cuing system in my exercises led uniquely to the exemplary target sentence rather than to informationally synonymous but syntactically ineffectual alternatives; second, that the embeddings were multiple within each exercise; and third, that the target sentence could be constructed stepwise by *all* students, not merely those who were already fluent writers. In this connection I note that Sherwin (1969) refers to transformational sentence-combining practice as, and I assume he means merely, "a refinement of exercises long in use in grammar textbooks" (p. 150).[4] If so, it is a "refinement" in about the same sense that we might, for example, consider the invention of the fixed airplane wing a refinement on the hot-air balloon.

In any event, I soon began calling my reverse parsing exercises "sentence-embedding problems," and included them in the transformational grammar curriculum I developed in Professor Tyler's Harvard seminar in the spring of 1962. I distributed mimeographed copies of this curriculum fairly widely that spring, in presentations to New England teachers, and again that fall in Miami Beach, to participants in a National Council of Teachers of English (NCTE) pre-convention workshop on linguistics, where I first met Kellogg Hunt.

Professor Hunt had begun to analyze mature writing transformationally, in terms of its underlying kernel-sentence constituents, and was preparing his celebrated study of the grammatical structures in student writing (Hunt 1964 and 1965a). He showed an interest in my sentence-embedding exercises, and it was then, I believe, as a result of our Miami meeting, that I began actively to consider the hypothesis that regular practice in sentence embedding might actually influence, albeit unconsciously, a student's choice of grammatical structures when writing. Similarly, I believe it must have been, at least partly, the sentence-embedding exercises in my Harvard grammar curriculum, the shape of that curriculum generally, and our conversations in Miami, that impelled Professor Hunt, a year and a half later, in the "Implications for the Curriculum" section of his *Differences in Grammatical Structures Written at Three Grade Levels*, to write the following:

> 2. This study suggests a kind of sentence-building program that probably has never been produced. Such a program would deal with sentence-combining transformations . . . The student could be exercised in the process of combining kernel sentences into more complicated sentences. He could also be given complicated sentences to break down into kernel sentences (p. 147).

At any rate, what Hunt in 1964 suggested ought to be done is exactly what

my 1962 Harvard grammar curriculum had proposed, complete with sentence-combining exercises.

Having returned to teaching in the fall of 1962, I worked at adapting transformational grammar for classroom use, developing in the textbooks I wrote during 1963 and 1964 the explanatory and organizational approaches I was later to employ successfully in *Our Sentences and Their Grammar*, the 1965 text used in my sentence-combining experiment[3] — a style and approach I continue to believe superior, in the secondary classroom, to both the pseudo-inductive method of the Oregon Curriculum materials, and the mock-explicit formulations of the *Roberts English Series*, which appeared nationally at about the same time, and alas, with a little extra help from the 1966 Dartmouth Conference, drove school grammar down to its twentieth century nadir.

Here my story nears its climax. In 1964 I returned to Harvard determined to test my hypothesis about sentence-embedding practice and writing. Professor John Carroll saw to it that I learned the things educational researchers need to know, and agreed to sponsor my Cooperative Research proposal. Having developed the textual approach and practice schedule, and most importantly the cuing system for multiple and recursive sentence-embedding exercises, I fixed upon the early junior-high grades as the level at which to conduct the study. Only one problem remained, finding the correct unit of measurement. But again fortune smiled, for in November of 1964 Kellogg Hunt and I met on a second occasion, this time in a preconvention grammar workshop at the NCTE meeting in Cleveland, at which Hunt first announced the findings of his *Grammatical Structures* study and introduced his unit of analysis, which he called the "minimal terminable unit," T-unit for short, specifically, any main clause together with all its grammatically subordinate constituents. At that meeting Professor Hunt placed in my hands a copy of his 1964 Cooperative Research report, and my measurement problem was solved. Soon after, Professor Carroll and I agreed that "syntactic fluency" would be a more precise name than Hunt's expression, "syntactic maturity," though in fact, both terms continue in use today.

So it was that in February 1965, when my grant proposal reached Washington, it contained not only the first application of Hunt's work to pedagogical research,[4] but also the exact details of the sentence combining study I was to conduct during the 1965-66 school year, with data analysis and write-up to follow during 1966-67. The die was cast. I carried out my experiment as proposed,[5] except for two changes: I abandoned as impracticable my plan to chart what Hunt had termed "unique dominant nominals," and later, recognizing that the term "combining" was less jargony than "embedding," I changed my project title from "Transformational Sentence Embedding," as originally proposed, to "Transformational Sentence Combining," retaining the subtitle "A Method for Enhancing the Development of Syntactic Fluency in English Composition."

With the experiment running in the field, I devoted the 1965-66 academic year, under the advisorship of Professor Wayne O'Neil, to a study of earlier grammar and writing research, soon discovering that there had always been two implicit claims for grammar study, not one — an editorial (error-correcting) claim, and a sentence structure (now, syntactic fluency) claim — but that

all existing research pertained solely to the editorial claim. This important distinction continues unnoticed by the majority of present day students of grammar research. In the summer of 1965, the Bateman-Zidonis study (1964) had come to my attention, in its Cooperative Research form. Professor O'Neil helped me see the vacuity of the Bateman-Zidonis hypothesis when evaluated on rational grounds alone (people simply cannot, in any overt sense, apply transformations), and Professor Gerald Lesser, Harvard's eminent psychologist of human development, in his course on educational research, began regular use of Bateman and Zidonis's NCTE monograph to illustrate an experiment poorly constructed as to design and statistical treatment.

Since the Bateman-Zidonis study was the only piece of research that explicitly examined the sentence-structure claim for grammar, I felt obliged to review it closely, knowing that closely had to mean truthfully, and truthfully harshly. Later it was suggested that I delete my criticism from the NCTE monograph version of my study, but my feeling was that as long as the National Council kept the Bateman-Zidonis study in print, my critique should remain.

This is not to say I committed no errors in my own study. For instance, as I indicate later in this paper, abandoning the description of dominant nominals represented a major failure of insight. Professor Jeanne Chall suggested at the outset that I give my subjects pre - and post -reading comprehension tests. I rejected the idea as troublesome and not very interesting, but now freely admit my error, as recently described by Stotsky (1975). Also, Professor O'Neil suggested that since, in the course of conducting my study, I had learned how very little sentence combining actually depended upon a grammar curriculum, I really ought to re-write the opening pages of my report, rhetorically downplaying the role of grammar in the experiment as a whole. This suggestion I also rejected, much to my later regret. Here my failure was not of insight, since I stated in both my 1967 Cooperative Research report (Mellon 1967: 112-113; pp. 74-75 in Mellon 1969), and in the 1969 "Epilogue" I added to its NCTE version (Mellon 1969: 84-85), that the rewriting cues in sentence-combining problems need not be given in grammatical terminology, and that sentence-combining practice is not, therefore, contingent upon grammar study. I simply never dreamed that readers of my report might be so careless as to conclude, in direct contradiction of its stated hypothesis, that the design of my experiment conflates the effect of grammar study and that of sentence-combining practice. Yet this is exactly the misinterpretation popularized by Frank O'Hare (1973), and repeated by others. Such is the power of grammar, that persons take leave of their senses upon the mere mention of the word.

But here ends my recitation of the pre-history and genesis of transformationally organized sentence combining. Let me now indicate what I shall discuss in the remaining sections of this paper. Part Two identifies and evaluates the three stages through which sentence combining has passed since the Mellon experiment. Part Three attempts to correct certain errors and misunderstandings about sentence combining that appear here and there in recent research literature. Part Four speculates upon an important psychological question, namely, what is learned conceptually ("cognitively") when syntactic fluency develops. Part Five clarifies the notion of "growth" as applied to the construction-count data of syntactic fluency research, and suggests future re-

search priorities. Part Six discusses pedagogical matters, and presents the case for cued problems used in tandem with open-format exercises.

Part Two: Developments since the Mellon Study

Developments in sentence combining from the Mellon study to the present have occurred in three stages. First was the O'Hare experiment (1973), a widely-circulated replication of Mellon's study, which introduced a grammar-free cuing system and yielded gains in overall writing quality as well as syntactic fluency. Second was the Strong textbook (1973), which introduced essentially uncued problems given in whole-discourse problem sets. Third are the textual materials for college freshmen currently being perfected by Pitkin at Utah State University (undated, thought to be 1975 or 76) and by the troika of Daiker, Kerek, and Morenberg at Miami University (1979a), which utilize sentence combining as the organizing basis for a complete composition course. I shall assess the significance of each stage.

Beginning with the work of Frank O'Hare, we note that O'Hare's experimental treatment differs from Mellon's in two ways only. First, in modifying Mellon's sentence-combining exercises, O'Hare eliminated the six (six and *only* six) operative grammatical terms in the Mellon study, those used to cue nominalizations and the expletive inversion, replacing them in the same post-sentence cuing position with the actual morphemes those six operations introduce. For example, if the constituent sentence "John asks Bill about his younger sister" were to be realized in the target sentence in its infinitive-phrase form, "for John to ask Bill about his younger sister," Mellon cued the operation "(T infinitive)," whereas O'Hare cued it "(FOR + TO)." Thus Mellon's students had consciously to learn a three-part association that linked terminological label with morpheme with placement in sentence, while O'Hare's had only to master a two-part association linking morpheme with placement in sentence. In other words, O'Hare freed his students from having to learn (or denied them the opportunity to learn, depending upon one's viewpoint) conventional labels for the five kinds of nominalizations they were producing in their sentence-combining problems — fact clause, question clause, infinitive phrase, gerund phrase, and derived noun phrase. The sixth grammatical term required of Mellon's students was "exp," an abbreviation of "expletive," referring to the extraposition transformation involving the place-holding morpheme "it."[8]

O'Hare's second modification of Mellon's experimental treatment concerned its locus in the English curriculum. Mellon placed his sentence combining in the grammar classes of a three-strand grammar/composition/literature curriculum, while O'Hare located his in the composition component of a double-strand composition/literature program. In his write-up and choice of title, O'Hare makes of this modification the occasion for an incredible amount of drum-beating about the "grammar free" aspect of his study. The difference, however, is inconsequential as regards the empirical aspects of the two studies. Rationally, the hypotheses of *both* stated that growth of syntactic fluency could be promoted *only by the language practiced in the sentence-combining activity,* not by the grammatical terms and formulations the activity might ostensibly, as in the Mellon study, have been intended to illustrate.[9] Reducing the matter to its essential points of difference, Mellon and O'Hare both cued

relative clauses and relative-clause reductions without using grammatical terminology; Mellon cued extraposition and five kinds of nominalization by use of grammatical labels, whereas O'Hare used morphemes. Beyond this difference, which is the difference between six two-way as opposed to six three-way associative learning tasks, there was no more direct connection between the balance of the conceptual content of Mellon's grammar text, and his student's sentence-combining practice, than there would have been, for example, had they instead been studying John James Audubon's bird book, in which case O'Hare would have had to title his study "Sentence Combining: Improving Student Writing without Formal Instruction in Ornithology."

But this is not to deprecate O'Hare's work. Quite the opposite. The dominant impression received by the relatively few classroom teachers who waded through the Mellon study, I suppose, despite what the study explicitly states to the contrary, is that sentence combining is something teachers can do only if they are willing to deal with transformational grammar. O'Hare's significant contribution was to persuade his very large audience, by proclaiming it repeatedly and in a manner that even the dullest and least attentive individuals could not fail to grasp, that sentence combining is in essence a free-standing classroom activity whose only content is that of its cuing apparatus. It isn't grammar and it doesn't need grammar. In so doing, O'Hare quickened the consciousness of America's English teachers to the potentialities of sentence combining in a way the Mellon study alone never would have done. And for that we stand in his debt. Effective scholarship requires a blend of substance and rhetoric, a truism I believe the Mellon and O'Hare studies illustrate in a complementary manner.

The second stage in the development of sentence combining is seen in William Strong's (1973) textbook, titled *Sentence Combining: A Composing Book*. Despite his questionable subtitle ("A Constructing Book" would have been accurate but bizarre), Strong's important contribution was to present sentence-combining problems not singly and outside a discourse context, but rather in sets ranging in size from three or four problems to ten or twelve, chosen so that the sentences yielded by each problem, arranged one after the other, form a complete piece of discourse. That is, in creating Strongian problem sets, one begins with a short discourse at hand, deconstructs its sentences so as to make of each a separate sentence-combining problem, then arranges these problems in the same order their target sentences had in the original discourse. Obviously, students writing whole-discourse problem sets must attend, in the specially intensive manner characteristic of sentence combining, not only to intra-sentential syntactic form, but also to matters of discourse form — to thematicity, reference, cohesion, tone, stylistic concordances, and the abstractive ideation created by parts functioning within wholes.

Simple as it seems, I believe that Strong's idea of presenting sentence-combining problems in whole-discourse sets is undoubtedly the most important advance in sentence-combining methodology since its inception. Unlike the work of O'Hare, whose approach can be substantively accounted no more than a slight modification of Mellon's first-generation methodology, Strong's work brought sentence combining the second half of its way towards full realization.

It is also true that Strong eliminated virtually all cuing from his problems,

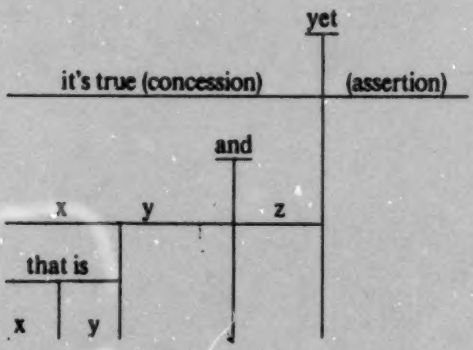
except that he continued the practice of listing constituent sentences vertically, using double-space spacing to indicate target-sentence boundaries. This shift from cued to open format is thought by some, quite erroneously I believe, to be Strong's major contribution. I think the whole-discourse idea far more important. Open format is doubtless quite appropriate for problems in whole-discourse sets, especially, perhaps, with older students. But just as whole-discourse sets direct students' attention to aspects of writing not discernible in single sentences, so too do cued problems, if appropriately formulated, cause *all* students to experience certain mature syntactic options not likely to be chosen, except by the already proficient writers, when the same problems are given in open format. In short, a complete sentence-combining program should include both cued problems given singly, and open problems in whole-discourse sets, since each can do things to which the other is ill-suited. I return to this discussion in Part Six below.

The third stage of sentence combining is marked by its extension to the entire composition course, in particular the course least stable in content and thus most readily open to new approaches, namely, college freshman composition. Here is how I believe this extension occurred. Notice first of all that cued sentence-combining problems have essentially one correct answer, and offer little to be discussed. But uncued exercises, particularly when given in whole-discourse sets, yield widely differing outputs, usually as many as there are students writing. And the differences invariably provoke useful discussion of the rhetorical effects of each version. What happened, I suspect, is that one or two Strongian exercises were regularly found to provide discussion content for an entire class period. Moreover, students perceived it as "low risk" discussion, since their own idea content was not on trial, but only the forms in which they had cast someone else's ideas. Thus they readily entered into the discussion process. Obviously, it wasn't long before instructors began to wonder whether sentence combining might not provide the content for a complete course.

Will Pitkin was one such instructor. His methodology, hierarchical base combining, represents an amalgam of the syntactic-construction technique of sentence combining and the levels-of-generalization notion from Francis Christensen's generative rhetoric. Pitkin begins by assuming that the ideational structure of discourse is binary (except in cases of serial conjoining). He labels any two connected parts with a generic X and Y, and calls his textbook *X/Y: Writing: Two Steps at a Time* (Pitkin, no date). Pitkin's base-combining exercises begin with lists of minimal sentences — he calls them "bases" — as in sentence combining. But his lesson content is not syntactic operations, for he assumes students know these. Instead, he teaches the semantic relations in which pairs of bases (or larger blocs of discourse) may stand in regard to each other, as components of the larger whole they comprise. Some of these semantic relations are: coordinate/coordinate, included/included, cause/effect, contrast/contrast, assertion/intensification, assertion/significance, and so on. There are more, and many have sub-types. Pitkin copiously illustrates each type, in such a manner as to cause the student also to attend to syntax, but subsidiarily. In format, Pitkin's problems begin with a list of bases, followed by a square bracket diagram indicating the X/Y units, and including the names of the semantic relations in which the parts are to stand, and sometimes also the actual conjunctions to be used. Here is an example:

Hierarchical base-combining problem:

a. She's just a mutt.
b. She's the best dog I've ever had.
c. She flunked obedience training.
d. She's a mongrel.
e. She's so ugly that the vet said spaying her would be a waste of money.



Student response:

It's true she's just a mutt, that is, she's a mongrel, she flunked obedience training, and she's so ugly that the vet said spaying her would be a waste of money; yet she's the best dog I've ever had.

In teaching ideational relations not discussed by Mellon-O'Hare-Strong, and in exercising students in deeply nested coordinations and paralleled structures, Pitkin's base combining blazes a trail into realms not previously explored by regular sentence combining. It is, however, a trail marked by an exercise format most persons will find complicated, and that even students as mature as college freshmen may not sit still for. (See Pitkin 1977a and b, for a fuller discussion of hierarchical base combining.)

In contrast to Pitkin's approach, the full-course sentence-combining text of Daiker-Kerek-Morenberg, titled *The Writer's Options: College Sentence Combining*, slated for 1979 publication, consists of eighteen units of study. The first eleven of these occur in a section titled "Structures," and follow a grammatical organization from relative clauses to participles, appositives, absolutes, prepositional phrases, coordination, subordination, and noun substitutes. The next six units, under the heading "Strategies," cover rearrangement, repetition, emphasis, coherence and tone. A third section, titled "Beyond," at present consists of one unit on selection and organization of ideas. Five exercise types are included, as follows: basic pattern exercises requiring use of grammatically named structures in single-sentence combinations; creative pattern exercises asking for the addition of new content chosen by the student and cast in stipulated grammatical forms; rewriting exercises in which grammatically-identified structures are used to improve a given sentence;

judgment exercises in which students identify the best of four variants of one sentence; and finally, the mainstay exercise type, uncued sentence-combining problems in whole-discourse sets. The text includes 57 whole-discourse exercises ranging over the major modes — an average of three per week throughout an 18-week semester. Altogether, the exercises in the Daiker-Kerek-Morenberg textbook constitute a practice regimen of rather large proportions whose effect can only be substantial, one would imagine, assuming the instructors believe in it and the students take a liking to it and pursue it assiduously.

In 1976, as their ideas for the complete course were taking shape, the Miami researchers conducted an experiment comparing the results of a sentence-combining course using Strong's textbook augmented by additional whole-discourse problems developed by the experimenters, with the results of a conventional freshman course (Daiker, Kerek, and Morenberg 1978b, and Morenberg, Daiker, and Kerek 1978) and found significant gains in syntactic fluency and overall writing quality favoring the sentence-combining course. Curiously, although the investigators speak about the question of open versus cued problems, they seem unaware that their study is not only the first sentence-combining experiment to use open format, it is also the first to employ whole-discourse problems. (I understand that the work of Stewart 1978c had not come to the Miami trio's attention at the time of their write-up.) These changes in experimental treatment are important, and their not having been recognized and controlled opens the Miami study to interpretations that I imagine run counter to the investigators' predilections. For example, since the gains differential favoring the sentence-combining course was roughly the same in magnitude as that found in seventh-grade studies using cued single-sentence problems, one might conclude that the open-format and whole-discourse factors yield no additional effects of their own. But I don't take this possibility seriously, for as I argue later in this paper, control-group/experimental-group studies with college writers stand on rather shaky ground empirically, regardless of their findings.

In a personal conversation in which he implied the use of an experimental model I think superior, Pitkin has told me that his students wrote better than did a matched comparison group *at a neighboring college,* but I have no further information on the subject, and am uncertain even whether Pitkin designed the experiment with a view toward write-up and publication. In any event, apart from crucial differences in exercise scope and format, the remaining difference between Pitkin's course and that of Daiker, Kerek, and Morenberg, as suggested by their text, is that Pitkin limits his subject matter to the semantic relations his base-combining exercises illustrate, whereas the Miami text, in its second half, includes conventional rhetorical content accompanied by a strand of continuing sentence-combining practice. This strikes me as entirely appropriate. Obviously, educators should look to the day when sentence combining is widely enough used in the secondary grades that students will enter college ready to devote their time, in writing courses, to direct study of sophisticated rhetorical concepts. Until then, the approach of Daiker, Kerek, and Morenberg seems sound, though I think not yet optimal (cf. Part Six of this paper), and I see it productively involving large numbers of students in sentence combining.

Part Three: Misunderstandings Corrected

It is important to correct certain errors and misunderstandings about sentence combining that have cropped up in various places. First there are a number of references inaccurately linking the Mellon study with that of Bateman-Zidonis (1964 and 1966). O'Hare started the confusion by claiming that Mellon is "a similar kind of study" as compared with Bateman-Zidonis, and that "the two studies proved to be remarkably similar" (p. 6). In fact, Bateman-Zidonis hypothesized writing growth stemming from direct application of linguistic formulations, while Mellon hypothesized growth resulting from certain kinds of language practice merely facilitated, and that only initially, by knowledge of transformational operations. Mellon's experimental treatment consisted of combining groups of short sentences into longer more mature ones according to a cuing format requiring knowledge of six grammatical terms; Bateman-Zidonis's experimental treatment consisted of breaking down longer sentences and naming their constituent transforms from a roster of 46 rules. Mellon used the T-unit and looked only at constructions known to be criterial of maturity; Bateman-Zidonis used the orthographic sentence and looked at all transformations for which names were available. When studies differ diametrically on hypothesis, experimental treatment, and dependent measurement variables, as do the Bateman-Zidonis and Mellon studies, it is nonsense to call them similar merely because they both pertain to writing and differing aspects of grammar study. O'Hare does so mainly in order to lay a rhetorical groundwork for his own experiment, and in the process muddies important distinctions.

Thus was the error begun. Shortly thereafter, Stotsky (1975), in a major article, in describing the purpose of Mellon's sentence-combining curriculum, writes that Mellon did thus and so "in order to demonstrate that *the sentence-combining practice of the Bateman Zidonis study* [italics mine], not the learning of grammatical rules *per se*, had led . . . etc." (p. 48). What confusion! There *was* no sentence combining in Bateman-Zidonis[9]. Bateman and Zidonis's students parsed sentences and labeled the parts, purely and simply, albeit with transformational terminology. Yet the error persists. Bamberg (1978), for example, has quite recently written that the Bateman-Zidonis experiment "used sentence-combining exercises only as supplementary practice" (p. 49). In fact, Bateman and Zidonis used sentence combining not at all, for the very idea had yet to enter their ken.

More recently still, Winterowd (1976), in a survey of research on linguistics and composition, begins by referring to Bateman-Zidonis as "a landmark — in effect, a starting point for other studies which. . .are more securely founded. In particular, John C. Mellon. . .etc." (p. 206). If Bateman-Zidonis is a landmark, it is a negative one, in the sense that Ford's Edsel was a landmark. Moreover, as should be obvious from my opening remarks in this paper, the Mellon study was designed before the appearance of Bateman and Zidonis's work. Winterowd goes on to state that Mellon reported "that the study of TG grammar, *combined with exercises in sentence combining* [italics Winterowd's], enhanced the syntactic fluency of ninth-graders" (p. 206). Wrong again. Even the most inattentive reader of the Mellon study (which dealt with seventh graders, not ninth) cannot fail to note how many times it attributes the syntactic-fluency gains solely to the sentence-combining practice, and not,

by specific hypothesis *not*, to the grammar learned.

Winterowd also states that the Mellon study is "superseded" by O'Hare's work (p. 206), a term which, although it pays yet another tribute to the rhetorical effectiveness of O'Hare's write-up, is not the word a careful scholar would use in reference to a replication that introduces as little substantive change compared with the original as did O'Hare's. Winterowd later writes, oddly, that O'Hare's control group had "absolutely no training in the TG grammar, a fact which differentiates O'Hare from Bateman and Zidonis and Mellon" (p. 207). What can this mean? On the one hand, Mellon's and Bateman-Zidonis's control groups obviously did *not* study transformational grammar. Perhaps Winterowd meant to write "experimental group?" Winterowd next says that "O'Hare did use . . . TG grammar in designing his routines" (p. 207), when the fact is, O'Hare did not "design his routines" at all; he requested them and received them through the mail from Mellon, modified the cuing format, and proceeded with his replication. Winterowd concludes by illustrating "the exercises that O'Hare designed," blithely using as his sample an item from O'Hare's "Appendix B" (1973: 93 ff.), which contains materials that O'Hare himself takes pains to point out were *not* used in his experiment. On the whole I have to say that Professor Winterowd's remarks on sentence combining, in this widely circulated volume (Tate 1976), are disappointingly distorted.

Let me turn now to other kinds of misunderstandings. First is the complexity issue, initially raised by Moffett (1968) and the late Francis Christensen (1968b), and rejoined in Mellon's 1969 "Epilogue" chapter (pp. 77-85). It is true that Mellon and O'Hare confined themselves to nominalizations and restrictive adjectival modifiers recursively embedded, sometimes fairly deeply. Thus their exercises yielded sentences requiring little or no internal punctuation, and characterized by what Christensen called long-base clauses and few if any free modifiers, being therefore, as Christensen saw it, counter-indicative of mature prose style. The function of sentence combining as initially conceived (Mellon 1969) was solely, through calisthenic practice, to increase the semantic "carrying capacity" of young writers' sentences, somewhat analogously to the way high jumpers' deep knee bends and stationary high kicks increase the heights they attain in actual jumping. Thus the sentence-combining problems had to be as structurally complex as it was possible to make them without rendering them incapable of solution. But style was not taught, one way or another. Moreover, as Cooper (1973) pointed out and persons can see for themselves, sentences with long, deeply embedded, and restrictively modified base clauses abound in mature writing, particularly exposition; but because they are well suited to the ideas they carry and the contexts of their use, they do not call attention to themselves. In any case, from O'Hare's "Appendix B" (1973: 93-101) up to and including today's whole-discourse exercises, all sentence-combining programs that have sought to teach style have done so using the kind of final free modifiers described by Christensen, though he does not use exactly this phrase, as a hallmark of belletristic narrative prose.

Notice too that although we occasionally hear free modifiers spoken of as if they were different from the sentences used in sentence combining, they are not. All transformationalists would agree that the surface structures Christensen termed "free modifiers" are realizations of separately statable sentential propositions, which, although juncture-bounded in their surface forms, result

from transformational operations whose function is sentence combining." In short, Christensen's free modifiers are *not* some different breed of linguistic cat from the constituent sentences regularly found in sentence-combining exercises, although the majority do result from the nonrestrictive surface-structure ellipses I discuss in Parts Four and Five below.

Another researcher troubled by the complexity issue is San Jose (1972 and 1978), although her concerns arise from somewhat different grounds. Because she rediscovered what writing researchers long have known (cf. Mellon 1969: 27-28), that clause lengths and therefore syntactic complexity differ from one mode of discourse to another, and because she regards as significant the completely unsurprising fact that Combs's (1976a) post-treatment clause length of 7.74 words, obtained from narrative and descriptive writing (p. 140), is less than the 8.12 words per clause observed in the argumentative writing of fifth graders by Perron (1976a). San Jose concluded that there exists

> . . . a problem with internal validity in the sentence-combining studies, when what is being measured, *i.e.*, what kind of writing, is thus unclear; and certainly a problem with face validity when after 18 weeks of sentence-combining treatment the seventh-graders are still producing T-units and clauses shorter than those of fifth-graders who are merely asked to write argument (1978: 91).

Apparently San Jose failed to note that Combs *did* specify kind of writing (again, narration and description). She seems to be assuming that proponents of sentence combining claim that the method obviates differences in syntactic structure which ordinarily result from the differing ideational requirements of different modes. Obviously it does not, nor does anyone believe it does. I well remember noting two phenomena in scanning the raw structure-count data in my own study — one, totals based on students' pretest expository and argumentative essays were frequently higher than those of their posttest narrative and descriptive writing, but two, mode for mode, the posttest totals were generally higher across the board than the pretest totals. Although I certainly believe more research is needed on the mode-of-discourse variable in sentence-combining exercises, especially whole-discourse problem sets, there is no doubt in my mind that sentence combining in any mode of discourse promotes syntactic fluency in all modes, even though the syntactic requirements of each mode, in general, will continue to differ from one to another. In short, the problem at hand stems not from the validity of sentence combining research, but rather from San Jose's understanding of it.

San Jose (1978) also refers to complexity of a different kind, namely, the complexity of everything that remains unknown about human language development, within which "syntax is only one small element" (p. 92), and compared with which sentence combining is "narrow and mechanical." I sympathize with San Jose's desire to shake the fist of doughty humanism in the face of what she thinks a coldly technical instructional procedure. On the one hand, returning to my analogy of the track athlete, I assure her that a vaulter's knee bends and high kicks neither replace nor in any way simplify the coach's task of teaching the skill of high jumping. They merely help the jumper jump higher, successfully, more of the time. On the other hand,

Strongian sentence combining is more than a calisthenic exercise, includes more than mere syntax, and requires teaching that is anything but technical and mechanical.

Finally, I turn to an article likely to have been read by more classroom English teachers than all the primary sentence-combining studies taken together, the brief *English Journal* piece by Marzano (1976) brazenly titled "The Sentence-Combining Myth." Marzano reveals his lack of knowledge from his very first paragraph, which quotes Mellon's 1969 sentence, " 'It follows then that growth of syntactic fluency can result only from increased use of sentence-combining transformations' (p. 13)" (p. 57), without following comment, but in such a way as to imply that Mellon meant "use" in a conscious sense, "use" that has been overtly taught, presumably by means of sentence-combining practice, much as small children are taught to use silverware and toilets. What my sentence intends, of course, as is clear in its context, is that the phrase "use of sentence-combining transformations" refers to tacit use, that is unconsciously learned by all children whether or not they ever come near sentence combining, use in the sense that, for example, one "uses" the friction under one's feet in order to walk. The syntactic-fluency differences between the writing of younger and older students are the differences between few and many embedding and combining transformations observed within each T-unit, and have nothing whatever to do with what the students may have been taught, or what if anything they may be aware of "using" (except in the case of some college and adult writers, who may consciously know about the operations of surface-structure ellipsis). My statement demonstrates no "reverence" for pedagogical sentence combining, as Marzano claims, nor does it betoken "a rather lofty position" assigned such pedagogy (p. 57).

Marzano next questions the efficacy of sentence combining ("If one examines the research carefully, enthusiasm for sentence combining should fade." p. 57), first by trotting out the non-issue of grammar versus no-grammar, then by noting that a small sample of Mellon's control students bested his experimental students in overall writing quality — a point O'Hare (1973) similarly belabors. My feelings on the overall-quality issue remain unchanged, namely, in research conducted in grade ten and below, over periods of one school year or less, we should *not* expect enhanced syntactic fluency gains to be reflected in overall-quality judgments unless (a) the "gains" are characterized by optional surface-structure combinings, and must therefore be considered special performances rather than growth (cf. below, Parts Four and Five), or (b) some other biasing factor has affected the quality scores, such as the experimenter's expectation or the teaching of a very good writing instructor.[12] I have no doubts, as I point out later in this paper, that the gains of O'Hare's students were not "growth" but special performances, and that his students' higher quality scores resulted partly from the effects of these special performances, and partly (which I acknowledge is the way *all* teaching should work), from heightened teacher expectation. At any rate, I included the overall quality check in my own study only to insure that the writing of the sentence-combining students did not decline in quality as a result of their trying too much too soon, thus garbling their output. Seeing that their writing did not differ significantly in quality from that of the placebo group (which

had neither sentence combining nor traditional grammar), I was in fact quite pleased to learn that the teacher of the control-group students turned out to be reputed the best composition teacher in her entire school building.

The Marzano article next presents a mathematical quibble with O'Hare's forced-choice rating procedure, an issue of importance only if one is concerned about the possible occurrence of extremely improbable events. Marzano then reports a correlation study showing that the sentence combining in a certain set of compositions predicted only 25% of the variance of their overall-quality ratings. Not only does Marzano seem unaware that this is 25% *more* than disbelievers in syntactic fluency like to think is the case, he also states that it is "certainly not as strong as the [relationship] alluded to by Mellon and Hunt" (p. 59). I am unaware of any such allusion in Hunt, and for myself I can only reiterate what I say in my study (Mellon 1969: 59 and 69), when I surmise that a syntactic-fluency increase of one embedded sentence in some form or other in every second T-unit (which is what my construction counts indicated) would not likely be remarked by persons rating overall quality by the five-factor holistic method I used (Noyes 1963).

Marzano then shows a sample sentence-combining problem followed by its solution, stating, "Hunt and Mellon assume that the above process is close to the mental process one goes through when composing an utterance" (p. 59). Unreferenced as it is, and diametrically opposite what Hunt and Mellon not only "assume" but know, Marzano's statement is intellectually irresponsible, and plain ignorant. Finally, Marzano invokes a study of factor analysis, the quintessentially irrational behaviorist methodology, in a ludicrous attempt to refute the theory of transformational grammar (p. 59). Marzano then claims, even more risibly, that Christensen and Munson's (1968) wholly grammar-dependent sentence-writing exercises present a "much less complex concept of modification" (p. 59). Marzano thus recommends exactly the kind of overt grammar application that O'Hare (1973: 26) found so impossibly difficult in his Scottish schooldays. On this point, I agree completely with O'Hare.

Obviously, the Marzano article never should have reached print, certainly not in the *English Journal*. To be sure, the *Journal* matched Marzano's piece with a longer, more intelligent pro-sentence-combining article by Strong (1976), and later published positive and helpful letters in the same vein by Ney (1976b) and Combs (1976b). If Marzano's article had presented just one real counter-argument against sentence combining, its publication could be defended. But it did not. It is inexcusably bad, a travesty of truth seeking. One can only hope its damage shortlived.

But correcting misunderstandings and errors is never a pleasant undertaking, and I am glad to come to the end of it. My necessary animadversions notwithstanding, the great majority of persons who have commented on sentence-combining research and methodology have done so with precision and clarity, and have fairly represented sentence combining to the profession at large.

Part Four: Syntactic Fluency and Learning

Let me turn now to a psychological question that has intrigued sentence-combining researchers from the beginning — what, if anything, is learned when syntactic fluency increases? What connection, if any, exists between increased syntactic fluency and cognitive development?

Here some agreement on terminology is important, starting with "learning" and ending with "cognition." As ordinarily used by psychologists (other than behaviorists), "learning" refers to the acquisition of knowledge and skills. Of "skills" it is important to remember that a skill once acquired is a skill learned, even though, with the passing of time and owing to changes in the parts of the organism upon which the skill operates, the degree or extent of its application may increase, in a manner we loosely but erroneously label development. Persons at age ten, for example, have fully acquired the motor skills of running, throwing, and jumping; the reason they can run faster, throw harder, and jump farther at fifteen is not, as we commonly say, because those *skills* have developed, it is rather because their limbs have grown longer and their muscles larger and more powerful. In a moment I will show how the same analogy applies to the skill mechanisms underlying such mental phenomena as syntactic processing, immediate syntactic memory capacity, temporal attention span, and perceptual field size, all of which are commonly said to develop either as a result of syntactic fluency increases or as a necessary precursor to such increases, whereas I believe the development is of something quite different.

"Knowledge," in turn, may be overtly conceptual and namable by one's vocabulary of words, or wholly tacit, as is the knowledge of linguistic structures acquired in early childhood. The learning of overt conceptual knowledge occurs in two forms — we acquire new concepts and the new words necessary to name and talk about them, and we also add to, and establish an increasingly intricate network of interrelationships among, the meanings of concepts we already possess, along the lines suggested by L.S. Vygotsky (1962), in his classic distinction between spontaneous and scientific concepts. Finally, by a terminological sleight of hand, we attach the label "cognition" to the various manifestations we observe of the interplay between conceptual knowledge, overt and tacit, and the several mental skills. As these manifestations grow more adultlike in character, owing primarily to the growth of knowledge, we refer to the change as "cognitive development," and frequently find ourselves using that term as if it named something different from conceptual knowledge organized by mental skills. But it does not. Obviously there is no harm in phrases such as "cognitive development" and "cognitive integration," just so long as we bear in mind that they are merely names for conceptual knowledge operated upon by the skills of mentation, for example, the skills of logical reasoning, classifying, analysing, organizing, and so on.

Given the acquisition of conceptual knowledge, we cannot help using it. That is, we cannot prevent our seeing what it causes us to see. It is well known that the character of our perception is governed by our conceptual knowledge. The point is not just, for example, that doctors *can* see disease in an x-ray that to the rest of us seems merely random shadows, it is that they *must* see it, can't *help* seeing it, because of what they know. So it is with one's language. At the surface-structure level, speech or writing may be viewed as a series of primary and secondary statements. Each statement consists of a predication upon some name, and the name in turn represents conceptual knowledge. In form, these names are, of course, the dominant NP's in each primary or secondary statement. In English, dominant NP's, other than pronouns used for back reference, occur in three forms: one, a noun head plus various combi-

nations of restrictive relative clauses and relative-clause reductions; two, an abstractive verbal noun head plus whichever of its deep-structure subjects, objects, and complements may be retained; and three, a non-headed sentential nominalization in clausal or verbal-phrase form. These names, the dominant NP's of our statements, are exactly as complex in content, and therefore in syntactic form, as is the conceptual knowledge in our minds. They are outward linguistic realizations of the underlying propositions of thought which represent what we see, the sense we make of the things and events of the world. And once again, they are as rich in conception, and thus in structure, as what we *know* conceptually — no more and no less.[13]

What I am saying is this: as young persons' conceptual knowledge grows broader in scope and richer in structure, this growth causes them to see *more* things interrelated in *more complex* detail. The process of composing thought into written language moves from conception to construction to inscription, and the structure of the product directly mirrors that initial conception. As a result, the names persons make, first to represent and then to say what they see, necessarily grow more complex in content and therefore also in form, with the passing of time. In other words, that part of syntactic-fluency growth attributable to increasing elaboratedness in the grammatically restrictive structure of dominant NP's is a direct and unavoidable consequence of the development of conceptual knowledge. And I cannot see how practice in sentence combining might contribute to this development, except in the weak sense that each sentence-combining problem, as a text to be read, counts as a minuscule bit of the all-day every-day language input upon which conceptual development is in part contingent.

I must now correct two misunderstandings about the relationship between syntactic-fluency increases and cognitive development. First is an error running throughout Hunt's research (1964, 1965a, 1970a), namely, that the difference between mature and immature discourse is exhaustively characterized by the statement that younger writers cast as sentences the content that older writers subordinate by means of sentence-combining transformations.[14] The error is not that this view is wrong, but that it is only half right. It tells only part of the story. The other part is that perhaps two-thirds of the deep-structure content, that is, two-thirds of the sentential propositions underlying mature sentences, simply are not present anywhere in the writing of youngsters, either as embeddings or as separate sentences. This content isn't there precisely because the conceptual knowledge of younger persons, as I have just pointed out, has not developed enough to require the formation of highly complex names in order to represent that knowledge.

Hunt's well known "aluminum" passage (1970a), created by deconstructing a short piece of mature discourse into its underlying sentential propositions, which age-grades persons according to the forms in which they reconstruct the original, further adds to the impression that syntactic fluency increases solely as a result of older writers applying more sentence-combining transformations to a given set of kernel-sentence content, whereas the truth is that the NP's of mature writing consist of many *more* kernel sentences than those of immature writing, simply because the "names" upon which the mature writer predicates reflect, literally, a far richer and more complex conception of things. Persons wishing to satisfy themselves on this point need only count the number of

kernel sentences underlying the dominant NP's of a seventh grader's expository or argumentative essay, then compare those totals with a similar analysis of the writing of their favorite professional essayist. In short, mature writers do not merely see and say the same thing in fewer sentences, they see and say *much more* in fewer sentences.

Interestingly, the data of my own study suggested exactly this point, specifically, in the experimental observation that inter-T unit coordinate conjunction failed to decline in frequency in the experimental group. Interpreting this fact, I wrote the following:

> Thus the more likely conclusion is that older students actually are inspired to make additional secondary statements in each independent clause, rather than merely to collapse therein the content of what it earlier would have occurred to them to write separately. In a word, the differences between mature and immature writing are the result more of elaboration than of condensation (p. 58).

Today I would gloss the word "inspired" as "required by their maturing conceptual knowledge," and I would add "restrictive" to the phrase "secondary statement." Otherwise my observation holds, and represents a point overlooked by subsequent syntactic-fluency research, with the exception of Pedersen's (1977a) inquiry into increases in lexical density associated with sentence combining practice.

The second misconception, though relatively harmless, is the delusion that the notion of "chunking" (Miller 1956) in any way clarifies our understanding of the thought-language relationship. Hunt (1970a) cites Miller's famous essay on the magic number seven, and its use of the phrase "cognitive integration" — a term which is merely jargon for the logical deployment of conceptual knowledge — and surmises that embedded sentences are "chunks," an idea repeated by O'Hare (1973: 32), Combs (1976a: 138), and doubtless others. But as George Miller himself regularly used to point out, in his Harvard psycholinguistics course,[13] "chunking" is not a theory but merely a loose way of talking about hierarchical class-inclusion relationships, talk that must ultimately be particularized by the theoretical structures characterizing the various domains where the inclusions occur. Here the domain is syntax, and the theoretical structures are transformations. Going from detailed formulations of transformations to "chunking" in pursuit of a deeper explanation of language development is the equivalent in auto mechanics, for example, of abandoning one's knowledge of carburetors, sparkplugs, pistons and crankshafts, in favor of merely asserting that the wheels turn because someone puts gas in the tank. In other words, while talk of "chunking" is a convenient shorthand, we should bear in mind that the term reductively obscures known distinctions, rather than characterizing and explaining them.

Thus far, on the question of learning, I have established that syntactic-fluency increases observed in dominant NP's result from, but do not cause, the growth of overt conceptual knowledge. But what of tacit knowledge, specifically, tacit knowledge of linguistic operations? Does sentence combining cause students to learn, in the sense of tacitly acquire, new linguistic operations? The answer is no, although, as I indicate below, it may be used as a ve-

hicle for practicing certain surface-structure combining strategies that can be actively taught and learned. But Hunt's 1965 research showed that all the transformations employed in the three kinds of dominant NP's I have described, plus the operations of intraclause coordinate conjoining, occur in the sentences of even the youngest writers. Accordingly, just as the child who has learned to walk across the livingroom can walk as far as its energies will permit, so too the writer who has learned the restrictive-relative-clause transformation, for example, can apply that transformation as frequently and as deeply within a dominant NP as is required by the conceptual knowledge that the NP represents. Ney (1974) seems to agree with this viewpoint, in that he attributes syntactic-fluency growth not to

> central effects, that is, changes in the linguistic ability of students, but to peripheral effects, that is, changes in certain skills which students utilize in the writing process. These skills include (1) mnemonic skills, (2) sentence processing (or reprocessing) skills and (3) skills connected with the raising to conscious control of linguistic resources which are innate to the student (p. 168).

If by "linguistic ability" Ney means the kinds of overt and tacit conceptual structures constituting one's knowledge of language, I agree with his remark as pertains to central effects.

But the remainder of the Ney statement, which takes us to the question of skills, needs amplification. Earlier I mentioned the skills of syntactic processing, immediate syntactic memory, temporal attention span, and perceptual field size. Although we commonly speak of the "development" of these skills, and Ney refers to the process of *"changes* in certain skills," it is important to understand that in actuality these skills neither change nor develop, they merely apply to whatever extent they need to apply, as dictated by the increasingly complex conceptual content of our statements. In the construction of dominant NP's, the names on which our statements predicate, perceptual field is as broad as conceptual knowledge permits, temporal attention span is as long as necessary to embrace the objects of conception, and syntactic memory capacity is sufficient to hold as many embedded kernel-sentence propositions as are required to realize the conceptual content that emerges from the "pure thought" of intention. In other words, the skills of perceiving, attending, and syntactically remembering do not change, they merely apply to larger units of linguistically structured conceptual content, which have grown larger as a result, once again, of the elaboration of conceptual knowledge in the maturing child's mind.

On the other hand, returning again to the central theme of learning, I do think that one important and fundamentally new skill is acquired during the period between grades seven and nine. It is a skill responsible for much of the syntactic-fluency increase observed from this period through adulthood, and it can be activated by sentence-combining practice carried out during this period. Rather obviously, perhaps, I am speaking of the skill of decentering, the departure from egocentricity that Piagetian psychologists observe shortly after the time when the child reaches the stage of abstract logical thought (Elkind 1967). Decentered writers can do two things they could not do while still

egocentric. One, they can dissociate themselves from their words, whether written or held subvocally but consciously in mind, and view them as artifacts subject to on-the-spot crafting. Two, they can stop the flow of words from the wellspring of intention, then start it again at will, seconds or moments later, faucet-like, without extinguishing their thought or losing their intention, thereby gaining the time such crafting requires. In short, the skill of decentering permits sentences to be consciously constructed and reconstructed, as it were, in mid-discourse. And the behaviors required by sentence combining, when engaged in by students ready to decenter, can trigger the emergence of this vital skill. (Cf. Piaget 1952, and Flavell 1963.)

Finally, our language also provides certain surface-structure operations that can be actively utilized by decentered writers to introduce nonrestrictive secondary statements into primary statements. Sentence-combining practice can teach these operations in the sense that it exercises the student writer in their use and manipulation. Contrary to Ney's statement quoted above, however, they are not innate. Rather, as Ney himself acknowledges in an earlier discussion (1973), they are surface-structure maneuvers unique to particular languages, that occur mostly in writing and clearly are learned only through experience with the written language. And most important, they are different in function from the restrictive embedding and coordinating transformations to which I have been referring in connection with dominant NP's. Specifically, these operations are the following: predicate-phrase conjoining, participial and gerundive conjoining in categories usually labeled adverbial, conjoining in nominative-absolute form, the logical conjoining of whole sentences, and the conjoining of minor sentences reduced in form to nonrestrictive relative clauses, nonrestrictive appositive phrases, and so on, (these last being the structures Christensen called "free modifiers"). One might think of these operations (except for the logical conjoining of sentences) as surface-structure ellipses. Unlike the restrictive embeddings forming dominant NP's, these ellipses introduce nonrestrictive semantically-secondary statements separable from the primary statements of our discourse. When we write sentences incorporating these secondary statements, short-term (as opposed to syntactic) memory obviously comes into play, as does conscious temporal attention span, which is different from the automatic attention discussed above, and can be as long as the decentered writer wishes to make it — seconds, minutes, I suppose even hours, as long as one wants to continue fussing with the combining of one statement into another. I now realize that it was this kind of protractable memory and attention, the kind that comes as a result of decentering, that I had in mind in my "mnemonic skill" remarks in 1979 (Mellon, p. 24), to which Ney and others have referred.

Summing it up, I have made the following points in this discussion of learning and the development of syntactic fluency:

1. The enrichment of the maturing child's network of overt conceptual knowledge, which we ordinarily term cognitive development, is the cause, not the result, of that portion of syntactic-fluency increases attributable to the greater complexity of dominant NP's, the "names" on which one predicates in every surface-structure statement.

2. Pending the results of research specifically addressing the question, it appears that sentence-combining practice does not, except weakly, contribute to

the growth of overt conceptual knowledge.

3. Tacit knowledge of restrictive embedding and conjoining transformations, brought into play in the construction of dominant NP's, is present in the minds of even the youngest writers. The use of *more* transformations embedded deeper per dominant NP is a linguistically nonsubstantive phenomenon (i.e., does not represent additional tacit learning) that also results from, rather than causes, growth of conceptual knowledge.

4. The skills involved in syntactic memory and processing, temporal attention span, and perceptual field size, which are automatically brought to bear in the construction of dominant NP's (and thus in the statements we make with those NP's) do not develop or increase or change in any way, and do not, therefore, contribute to increases in NP complexity. They merely do whatever work they are called upon to do to handle the conceptual content of the NP's being constructed — which is, of course, *more* work, on average, per dominant NP, as the writer matures.

5. A new skill, the skill of decentering, emerges during the junior high grades, allowing students (a) to regard their written words as external realities, hence craftable artifacts, and (b) to stop and re-start the flow of language without losing their thought and intention.

6. Decentered writers can consciously practice the sentence-combining operations involved in surface-structure ellipses, which introduce nonrestrictive secondary statements into primary statements, and can actively carry out these maneuvers in their writing in such a way as to register syntactic-fluency increases.

7. Sentence combining practice can trigger the onset of decentering, teach the operations of surface-structure sentence combining, and exercise the student in the manipulation of these operations in ways that facilitate their subsequent use in actual writing.

Finally, we must always remember that syntactic fluency, though it is a fluency enhanceable by sentence-combining practice as well as by regular writing and reading, is really only a statistical artifact, numbers that result when we count constructions. Though it is obvious that some writers are more or less fluent syntactically than others of the same age, no student "lacks" syntactic fluency. In this connection I note that Winterowd (1976: 206-7), in discussing his notion of something he calls a "scribal stutter," twice uses the phrase "lack of syntactic fluency." I think it would be terribly unfortunate if we were to establish, or even speak about as if it existed, an arbitrary cutoff point in our syntactic-fluency measures below which we would make imputations of lack. Every young person possesses syntactic fluency to some degree at any point in time, and every person's syntactic fluency will mature in its season. Sentence-combining practice only nurtures and enhances the natural process. Let's don't hear any talk of a *lack* of syntactic fluency.

Part Five: "Growth" Measurement in Sentence-Combining Studies

Turning now to the notion of "growth" of syntactic fluency, as that term has been employed in research on the effect of sentence-combining practice, we ask the question, do current structure counts measure growth, or do they measure essentially optional performances of thought characterized by intentional utilization of the operations of surface-structure ellipsis, or do they conflate the two?

As should be obvious from the form of this question and from the whole of my discussion in Part Four, it seems to me that all sentence-combining studies to date, my own included, have misapprehended the idea of "growth." Briefly stated, I believe that only increases in the restrictive embedding-operations forming dominant NP's deserve to be called growth, reflecting as they do the steady development of conception. On the other hand, I believe that the ability to make referentially nonrestrictive, grammatically subordinate, and semantically secondary statements in superficially elliptical forms (whose import, of course, can be crucial) is in essence a "one-time" learning — a knack, a trick, an idea, a semantic style open to decentered writers in direct consequence of their decenteredness, who only need the idea drawn to their attention, and of course some subsequent practice time, whether with sentence combining, sentence imitation, or regular writing. Just as obviously, therefore, the variables we have until now used to measure syntactic fluency — principally words per T-unit, words per clause, subordinate clauses per T-unit, and modifiers per T-unit — have indeed conflated growth in the complexity of naming and the onset of this nonrestrictive statement-making ability.

Consider how this view of the "growth" notion influences our interpretation of existing sentence-combining research. Studies have been conducted mainly at three points in the curriculum — grade four, grade seven, and the freshman year of college. Grade four marks the beginning of the writing years, and the large majority of fourth graders have not decentered. By grade seven, most children have attained the stage of abstract logical thinking and are ready to decenter. In the college freshman year, once they conquer the inhibitions engendered by fear of evaluation, all writers except those without writing experience in their high school years can do syntactically whatever they elect to do and/or are shown how to do, and therefore — the crucial point — whatever they perceive their instructors want them to do.

Accordingly, I am not surprised that the magnitude of growth differentially observed in the sentence-combining groups in fourth grade studies has proven relatively small (cf. Miller and Ney 1968, Hunt and O'Donnell 1970, and Perron 1974), since the finding tends to confirm the hypothesis that sentence-combining practice cannot markedly increase dominant NP complexity in the writing of still-egocentric children. This hypothesis also explains, incidentally, the general failure of elementary-grade sentence combining to improve reading comprehension (Stotsky 1975). My guess is that the differences observed between fourth-grade control and experimental groups are attributable to two factors: One, in the case of perhaps one child in ten who is ready to decenter even by fourth grade, the sentence-combining practice helps trigger the onset of this skill, which in turn accounts for the increased syntactic complexity of that child's posttest writing. Two, as has widely been observed, sentence combining provides handwriting practice for children with late or lagging motor-skill development, thereby reducing the extent to which slow and consciously-monitored penmanship prevents the inscription of everything the child would otherwise write. The same is true of late-developing spelling ability, in which case sentence combining acts as copying practice. On this view, sentence combining plays a relatively minor, though by no means negligible, role in the elementary grade curriculum.

Turning to the grade-seven research (Ney 1966; Raub 1966; Mellon 1969;

O'Hare 1973; Combs 1976a; Pedersen 1977a), we would expect that sentence-combining practice at this age level would start the decentering process for all students. We might also assume that exercises in grades seven through nine or ten would be fairly evenly divided between restrictive embeddings and surface-structure ellipses, and that the dependent variables of measurement would be constituted so as to distinguish between the two. But the latter assumptions are counterfactual. Junior high studies to date, except for that of Callaghan (1977), have confined their exercises to restrictive embeddings (but see the discussion of O'Hare's experimental treatment immediately below). And no studies have analysed dominant NP's apart from surface-structure ellipses. All studies, moreover, label increases in overall construction counts as "growth," and all report results which, overlaid upon Hunt's three-grade-level cross-sectional data, indicate a growth rate of or slightly above two years for one.

Only O'Hare's results differ from the rest, in that O'Hare's students produced totals equal to Hunt's twelfth-grade measurements. In his write-up, O'Hare argues that his students' remarkable five-years-for-one "growth" rate, as he calls it, resulted from their being spared the odious and repressive grammar study in whose context Mellon's students performed their sentence combining. But subsequent experiments using grammar-free exercises report findings closer to Mellon's. The question arises, therefore, how does one account for O'Hare's anomalous results? Examining this question will clarify the point I am making about growth.

The answer at once recommends itself. Indeed, it fairly leaps out from Tables 4 and 5 of O'Hare's study (1973: 54). O'Hare's experimental students wrote 48 *more* subordinate clauses (noun, adverb, and adjective) per 100 T-units at posttest than at pretest, while his control students wrote *four* more. Now 48 in 100 is one in two, and means that O'Hare's students embedded one *additional* full subordinate clause in *every other* T-unit they wrote, atop a pretest base of one subordinate clause in every third T-unit. This increase is amazing! Since O'Hare reports a clause length of 8.55 words, we can see that half this total, 4.27, represents the average number of words added to each T-unit, which, subtracted from the overall per-T-unit increase of 6.12 words, leaves 1.85 additional words per T-unit, a residue not out of line with the other seventh-grade studies.

Obviously, a reanalysis of O'Hare's writing samples would tell which of these added clauses were restrictives, and which were nonrestrictive and secondary in their statement level. Until we have such a reanalysis, however, we must assume that the majority *were* nonrestrictives, since they are quite easy to produce, once decentered students learn the knack of saying elliptical secondary statements within their main sentences. Disbelievers have only to secure a piece of seventh grade narration or description having the syntactic parameters of O'Hare's pretest writing, then compare the difficulty of adding a nonrestrictive subordinate clause of some kind to every second T-unit (a minor feat in itself) with the almost impossible task of adding a restrictive clause into a dominant NP in every other T-unit. The latter, of course, cannot really be done without a complete reconception of the essay's content. In any event, I think the conclusion unavoidable that some biasing factor in O'Hare's two experimental classes *other than* Mellon's sentence-combining exercises,

grammar-cued or otherwise, (i.e., a biasing factor other than the experimental treatment) caused his students to write a large number of semantically secondary statements elliptically included as nonrestrictive subordinate clauses.

The main point is this, we cannot label these occurrences as "growth," and O'Hare is wrong to do so — though in fairness I must admit that until now, Mellon and all other sentence-combining researchers would also have called them "growth." Henceforth, a good general rule to follow is that any time a group of decentered student writers, within one school semester or year, under one teacher, register large increases in nonrestrictive surface-structure combinings, the increases do not represent stable changes of any kind. but optional performances of thought, optional secondary statements nonrestrictively and subsententially added to the main statements of their discourse, nearly always in response to some kind of signal, cue, or value prompt from their teachers.

This is not, of course, to impugn the veracity of O'Hare's study. Thousands of teachers in the high school grades would love to see their students learn the knack of saying more in this nonrestrictive secondary way, since in many cases the constructions used would be free modifiers, which are a distinguishing feature of mature prose style. The problem is, most teachers don't know how to give the effective signal or cue, don't know how to help their students begin using nonrestrictive ellipses. Interestingly, two recent and carefully designed studies by Callaghan (1977) and Sullivan (1977), conducted at grades nine and eleven respectively, employed sentence-combining exercises containing final free modifiers, and counted such constructions separately in their syntactic analyses. Both studies observed increases in final free modifiers under three different sentence-combining treatment conditions, but only those at grade nine were statistically significant. Returning to O'Hare, it had to be something he and his colleague teacher found themselves doing in mid-experiment, saw the results of in inter-test writing, and continued doing, that taught the students nonrestrictive ellipsis. Significantly, the exercises in O'Hare's "Appendix B" (1973: 93-101), which O'Hare wrote following the completion of his study, as content for his teacher's text *Sentencecraft* (O'Hare 1975), and which he doubtless learned about while conducting his experiment, include sentence after sentence to be combined via nonrestrictive surface-structure conjoining.

So if criticism is to be leveled at the O'Hare study, it can only be for a sin of omission, for missing an opportunity to make a path-breaking interpretation of data. Had O'Hare recognized it at the time (no one else did either), the great contribution of his study would have been to show that sentence-combining practice can teach the use of nonrestrictive elliptical conjoining far more effectively than it teaches restrictive embedding. Instead, in his write-up, O'Hare talks endlessly about grammar this and grammar that; he labels all the syntactic increases "growth," and says nothing — not even one remark — about the astounding subordinate-clause increases he found.

Another issue concerning growth of syntactic fluency at the secondary level is that of post-posttest durability of gains, a matter first raised by Mellon (1969:72). Combs (1976a), Callaghan (1977), Pedersen (1977a), and Sullivan (1977) have investigated durability, and report differing degrees of loss when student writing is sampled after various periods of time following cessation of sentence combining. But what should we make of even small losses? Are they

un-growth? Obviously not. They are, once again, the manifestation of special performances resulting from differing student responses, both conscious and unaware, to the requirements and teacher expectations of a given writing occasion. Until we define our dependent variables in such a way as to categorize restrictive embeddings and conjoinings in dominant NP's — to which we would look for lasting growth — separately from nonrestrictive surface-structure ellipses, which are highly responsive to prompting, it will remain impossible to interpret studies of the supposed durability of so-called growth.

Nor is it sufficient simply to count nonrestrictives separately. Sullivan (1977), for example, whose eleventh-grade study identified final free modifiers, actually observed *fewer* such modifiers at post-posttest than at pretest, after a large pretest-posttest gain. Similarly, Sullivan observed the following pre-post final-free-modifier gains per 100 T-units: 2.5 in the treatment group practicing the full sentence-combining program (20 hours); 7.8 in the group having half as much practice, and 4.2 in the control (non-sentence-combining) group. To persons accustomed to uni-directional results, these are messy data indeed, that attest most eloquently to the instability of the nonrestrictive secondary statements we call free modifiers. In future studies, therefore, we shall need to know whether students (particularly those in the senior high grades and college) have been explicitly told to write many free modifiers, or whether they had to infer from their sentence-combining exercises that such were wanted. And most important, we must know how their inter-test compositions were evaluated vis a' vis presence or absence of these structures. Only then will we be able to use the term "growth" in any meaningful way.

The preceding statements apply with even greater force to research at the college level. Four studies of freshman sentence combining have yielded four oddly conflicting sets of data (Ross 1971; Ney 1976a; Morenberg, Daiker, and Kerek 1978; and Stewart 1978c). We may compare the important features of these studies as follows:

	Total hours of practice	Length of experiment	Experimental-group gains, words/clauses
Ross (Winter 69)	30	10 weeks	2.7
Ross (Fall 69)	30	10 weeks	none
Ney	4½	10 weeks	none
Morenberg et al.	45	15 weeks	.89
Stewart	36	6 weeks	2.75

What are we to make of the differences? Daiker, Kerek, and Morenberg (1978) speculate that Ney's finding of non-significant differences results from his allotting the students too little practice time — ten minutes per class period during 27 periods, three per week in a ten-week term. Daiker, Kerek, and Morenberg then state that Mellon (1969) allotted sentence combining "roughly two hours each week for nine months" (p. 37). This is an error, though understandable, owing to Mellon's careless use of the term "experimental treatment" in one or two places to refer to the students' entire grammar curriculum, which did occupy two hours per week out of the six his students devoted to English. In fact, Mellon's "experimental treatment *per se* was five months in duration, running from January through May of the school year" (Mellon 1969: 39), roughly 20 weeks, and consisted *essentially* of the 183 mul-

tiple-embedding problems reported in Table 6 (p. 40), which amounts to nine problems each week. Since working-time per problem, including checking the solution, ran to five or six minutes, the whole matter averages out to two multiple-embedding problems per day, ten minutes total time, five days a week, for a total treatment time of about 20 hours. The daily time allotment was thus the same as Ney's, and exactly the amount of time I currently recommend for cued-format problems (cf. Part Six). I do think Ney should have required five days of practice a week rather than only three, both in class and during the students' outside time. Overall, however, despite Callaghan's (1977) finding that only *half* Mellon's number of problems, given to ninth graders in morpheme-cued format, duplicated Mellon's two-years-for-one syntactic-fluency counts, I nonetheless agree with Daiker-Kerek-Morenberg's conclusion that more sentence-combining practice than Ney gave *is* needed to change the writing habits (and, I would add, the writing choices) of students who do not begin such practice until college. In Part Six, I suggest a regimen of at least two whole-discourse open-format exercises each week in addition to the ten single-sentence cued exercises just mentioned.

If insufficient practice time accounts for Ney's failure to produce gains, a biased sample seems to explain the discrepancy in Ross's self-replicating experiments. Whereas her winter pretest clause length was a near-normal 9.2 (which rose to 11.9 at posttest, well above the 11.5 of Hunt's skilled adults), her fall pretest clause length was 10.8 (which rose non-significantly to 11.0). Her fall students, in other words, began the experiment writing clauses nearly as long as those of professional expository writing. More difficult to explain is the fact that, after a nearly even start, Stewart's six-week 36-hour treatment yielded three times the gains of Morenberg-Daiker-Kerek's fifteen-week 45-hour program. Two possible explanations come to mind, since the mode of writing in both studies was essentially the same — exposition inviting narrative and descriptive supporting details. One is that Stewart's blend of Strongian (uncued whole-discourse) exercises with Christensenian imitations of model sentences, plus overt discussion of free modifiers, is more effective than Strongian exercises alone, which is what Morenberg-Daiker-Kerek used. The other is that Stewart's students, having been taught what non-clause free modifiers were, and having recognized that these structures were wanted, wrote them more or less to order. I assume there is truth in both explanations.

All in all, I think we must conclude that college sentence-combining research to date provides very little in the way of detailed information, beyond the general fact that student writing *can* be influenced by novel practice activities such as sentence combining. But if we are to obtain interpretable data on the merits of specific forms and schedules of these activities, we must improve our experimental procedures. Nonrestrictive combinings must be identified apart from restrictive embeddings. Final free modifiers could be a subcategory of these nonrestrictives. Clause length counts that include nonrestrictives can be abandoned. Sentence combining treatments should be compared with additional non-teacher-graded free writing and other kinds of practice, so that we may learn exactly *what* it is that sentence combining is more efficacious than. Most important, experimental teaching programs should tell students what free modifiers are, and that their use and control are important factors in achieving a mature writing style. For clearly, by age seventeen or

eighteen the making of nonrestrictive secondary statements can rather quickly be made to become a conscious controllable process. Sentence combining shows students *how* the elliptical processes work, but a writer's decision *whether* to take thought and add nonrestrictive inventions is essentially a matter of choice, despite the fact that doing so usually indicates the writer is making finer distinctions about the topic being addressed. Accordingly, if in our posttests we want our experimental groups to write nonrestrictive secondary conjoinings, we should tell them so ahead of time. No longer should we hypothesize, implicitly, that sentence combining causes the *involuntary* occurrence of linguistic operations that by the college years, particularly after a course of instruction in which they are discussed and practiced, are optional, conscious, and governable.

Moreover, until we change our research methods, the door is open for clever empiricists with axes to grind to sabotage college sentence combining by the simple expedient of attributing performances that they, the experimenters, have actually prompted by other means to the supposedly automatic effects of sentence-combining practice — or to the *lack* of such effects. Suppose, for the sake of illustration, an instructor secretly interested in debunking sentence combining assigns sentence-combining exercises throughout the term, but then, just before the final intertest essay, trots out Strunk and White's famous dictum: Simplify! Simplify! Use short declarative sentences and prune all unnecessary wording! Then suppose the instructor marks and grades that essay accordingly. A week later, without further comment from the instructor, the students write what are destined to be their posttest compositions. Can anyone doubt that a majority of the students, seeking to conform to their instructor's most recent message, will consciously opt for a plain-style largely unadorned by modifiers and nonrestrictive statements of any kind, thereby providing the researcher with exactly the structure counts he or she needs to put the whammy on sentence combining? The same thing could also work the other way around, where a researcher wants to demonstrate the superiority over sentence combining of some other form of structure-expanding exercise. In this case, the students need only be rewarded near the end of the term for electing to include a great many free modifiers and nonrestrictives — "packing the patterns," as Christensen used to say — and they too will provide the numerical posttest data sought by the investigator.

In general I think we should abandon, at the college level, the kind of research designs we have been using, where experimenters pit their experimental groups against control groups of their own choosing. Some carefully analyzed research on restrictive embeddings might be useful in this context, but, by and large, we know that sentence-combining gives students practice in the various nonrestrictive elliptical operations, after which these operations are available for optional use. But anytime a college writer opts for unusually few or many of these operations, we can be sure it is the result of a biasing factor other than sentence-combining exercises *per se*. If college teachers really want to test the effectiveness of certain instructional techniques, they should match their students' end-of-term writing against writing from classes whose instructors are not under the experimenter's control, and who encourage their students in every way to produce the best and most mature writing they possibly can. As I recall it, this is the sort of experimental design Will Pitkin told

me about, in which he matched his Utah State University freshman writing against the best writing the Weber State College freshmen could produce.

The following statements now summarize what I have said about the notion of syntactic-fluency growth:

1. Only the increase of restrictive embeddedness in dominant NP's deserves to be labeled "growth." The incidence of nonrestrictive sentence-combining ellipsis, which begins at the time of decentering, does not represent growth of anything, but is rather the manifestation of specific and essentially optional cognitive performances, in which writers elect to introduce semantically secondary and grammatically subordinate statements below the main statement level in their discourse. Once the trick of dual-level statement making is learned, and the structures are mastered, it may be performed at will, in a way that is probably only slightly constrained by the subject matter of one's discourse, and not at all by mode.

2. The measures used in transformational syntax research, from Hunt's earliest work to present day pretest-posttest sentence-combining studies, (T-unit length, clause length, and number of clauses) fail to distinguish growth of naming capacity from second-level statement making. The fact that increases in T-unit counts are straight-line and uni-directional should not obscure the fact that they result from at least the two sources mentioned here, which ought to be examined separately. Developmental research on growth of restrictive dominant NP structure is needed. The work of Endicott (1973) and Golub and Kidder (1974), as critiqued by O'Donnell (1976), and that of Morrow (1978) and Belanger (1978), may be useful in this regard.

3. Growth of naming capacity (restrictive embeddings in dominant NP's) is probably not affected by elementary-grade sentence-combining practice, but it may be moderately affected by sentence combining in the junior high years, after the onset of decentering. This is a guess, and invites research.

4. The most pressing need at present is for a three-year longitudinal study of the effects of sentence combining practice in grades seven through nine, coincident with decentering. The practice program in such a study would include single-sentence problems in cued format, and uncued whole-discourse problem sets. Both kinds of exercises would require restrictive name-making and nonrestrictive ellipsis, the latter in increasing frequency. All structure counts would distinguish between these two kinds of operations. This three-year study, which would doubtless incorporate many other observations and treatments, should aim to become the definitive tryout of the sentence-combining idea. It should be carried out by a commercially disinterested academic research team. Fortunately it would be much too large and too long to be conducted as a doctoral dissertation.

5. Ideally, there should be no need for sentence combining at the college level. But this is merely a variant of the truism that there should be no need for freshman composition. Obviously such needs do exist, more now than at certain times in the past, it seems, and are likely to continue through the forseeable future. Although we lack the finely-graded information future research may provide, we know that sentence-combining practice improves the maturity of college writing. Apparently, practice with whole-discourse exercises accomplishes two things: One, it lowers writing anxiety by allowing the writer to deal with ideational content in which he or she has no stake, and

thus engenders respect for and confidence in the student's own syntactic resources and strategies. Two, it teaches the student how to, and to, deal consciously with his or her own written thought, as to its content and the forms of its construction, both within and between sentences.

6. But the research design of college sentence-combining studies must be changed. We know that college writers, at the end of a composition course that includes sentence-combining, can write few or many nonrestrictive secondary statements at will, and thus in response to a variety of signals and prompts totally separate from their sentence-combining practice. Thus researchers, instructors, and/or the writers themselves can bias construction count data at will. Research methods predicated on the assumption that the effects of sentence combining are involuntary and behavioral, and thus not subject to biases resulting from the conscious actions of experimenter or writer, while they may be appropriate for the junior-high grades, are wholly invalid in college.

Part Six: Exercise Formats and Other Pedagogical Issues

At the beginning of this paper, I stated that sentence combining and composition are not coterminous. Yet we are now seeing the development of composition courses consisting entirely of sentence combining — in fact if not in name, as at Utah State University, and in name and ambiance if not completely in fact, as at Miami University. While I certainly do not regard this as unhealthy, since sentence combining is in its infancy and we must measure its potentialities in a variety of experimental course structures, I nonetheless think we must recognize the limits of what sentence combining can do. Evidently, the composing of written language progresses from intention to conception to construction to inscription to editing. Sentence combining facilitates one's performance in the last three stages, but I cannot see how it might assist the process that transforms intention into conception, that is, the process of discovering and/or collecting ideas. To say the same thing in classical terms, sentence combining covers arrangement and style but not invention. Accordingly, I would be extremely uneasy about any non-remedial expository writing course, whether in the senior high school grades or the college freshman year, that did not specifically aim to teach invention and the concepts of argument (i.e., definition of terms, identification of issues, evaluation of evidence, ordering of reasons, refutation of counter-arguments, emotional appeals, etc.). And I suspect that a large majority of writing teachers would share my uneasiness. Similarly, no matter how much better the writing in an all-sentence-combining class, compared holistically with that in a traditional class, I would have to assume it could be better still were the sentence-combining lessons paired with lessons on invention and the structure of argument.

At present, however, the major pedagogical question relative to sentence combining is not the issue of its scope within the composition course or curriculum, but rather the issue of exercise format — specifically, open format versus cued. As we know, the first generation sentence-combining problems of Mellon and O'Hare were cued. Thus they called for the use of particular transformations, whose names might or might not be known by student and teacher. They yielded essentially correct or incorrect solutions, and because of their uniformity provided little grounds for whole-class discussion. Once the

cuing system was mastered, the working of cued single-sentence problems became a teacher-free activity, to be pursued individually by students as a calisthenic exercise. Although many teachers read the early sentence-combining research reports, apparently only a few ever manufactured problem sequences for individual use by their own students, either because they thought the problems too mechanical, or found the writing of them technically confusing (cf. Cooper 1973), or resented their teacher-free aspect, or doubted their impact on student writing, or thought the students would find them boring. (Interestingly, I have yet to hear reports of student boredom in connection with sentence combining, and when I do I'm reasonably certain the cause will be *teacher* apathy.) But the advent of Strong's open-format whole-discourse exercises, as already discussed, led to writing that lacked the arbitrary a-contextuality of single sentences, and permitted a wide variety of structural choices, some effective and some clumsily immature. Suddenly there was a great deal to discuss in the classroom, and teachers felt themselves back in their element. As a result, except in special cases such as Pitkin's hierarchical base-combining, cued exercises got lost in the shuffle. And this, in my view, is a major pedagogical error.

The issue of cued versus open format is not, of course, a matter of either/or. Obviously we must have open-format exercises, but I think we also need cued exercises alternating with them, for the following reason: Open format permits less proficient writers to combine sentences in awkward and immature ways, and it is only during the after-writing classroom discussion that they see or hear the better writers' sentences, including, perhaps, the originals from which the exercise sentences were extracted. Cued problems, on the other hand, cause *all* students to practice particular structures in the mature, full-sentence configurations present in the original model, and intended as the target sentence by whoever makes the exercise. And it is practicing certain structures in mature configurations, and experiencing their pseudo-production, particularly in cases of nonrestrictive surface-structure ellipses, that promotes the writing of mature full-sentence configurations on one's own.

To illustrate my point, I recently asked a number of graduate students at my university to work out a pair of sentence-combining exercises, which I gave them first in open format, then in cued format following a ten-minute session in which I taught the cuing scheme, using different and shorter sentences as illustrations. Here are the exercises in their open format, followed by the correct responses to their cued versions:

Exercise A:
The marshall prepared himself deliberately.
He squared his hat firmly on his head.
He loosened first one revolver then the other in its holster.
He planted his feet firmly apart.
His gaze was riveted on the man.
The man was approaching from the end of the street.
The street was strangely silent and deserted.

Response A:
The marshall prepared himself deliberately, squaring his hat firmly on his head, loosening first one revolver then the

other in its holster, and planting his feet firmly apart, his gaze riveted on the man approaching from the end of the strangely silent and deserted street.

Exercise B:
Professor Ross commented on something.
It was on the applications of White's work to the whole essay.
The applications have been attempted by researchers such as Fox.
Fox argues something.
It is that essays can be conceived as sequences of paragraphs.
The paragraphs are structurally related.
Each paragraph functions in relation to the whole discourse.
The way is much as a sentence functions as part of a paragraph.

Response B:
Professor Ross commented on the applications of White's work to the whole essay attempted by researchers such as Fox, who argues that essays can be conceived as sequences of structurally-related paragraphs, each paragraph functioning in relation to the whole discourse much as a sentence functions as part of a paragraph.[16]

The mature configurations targeted in the A sentence are the triadically paralleled participial conjoinings and the concluding absolute. In the B sentence they are the nonrestrictive relative clause and the repeated-noun ("paragraphs, each paragraph") absolute. Of fourteen writers, the number who used the targeted constructions were as follows:

Sentence A	*coordinate participles*	*absolute phrase*
cued format:	14	12
open format:	7	2
Sentence B	*nonrestrictive relative clause*	*absolute phrase*
cued format:	14	14
open format:	8	2

These fourteen students are skilled writers who know about the target constructions and have them at command. Yet almost none chose the absolutes, and only half the other constructions, in the open-format exercises. Less proficient writers almost certainly would choose the target constructions even less often, and much of the time their alternative versions would be over-compounded or garbled. Most importantly, the point here is *not* that absolute phrases, coordinate participles, and nonrestrictive relative clauses are necessarily better constructional choices than any others in the above exercises; rather it is that *if* one wishes to practice a student in the use of these constructions in these particular sentences, one cannot count upon their being chosen if the exercise is open format. In other words, to induce particular constructional choices, especially by the poorer writers, one must use cued exercises mixed with open.

Going a step further, I think that if one does not use cuing, one will see fewer mature syntactic configurations in the student's actual writing. As I interpret it, the Miami experiment (Morenberg, Daiker, and Kerek 1978) supports this belief. We note that although all the sentence-combining exercises were given without following cues (i.e., in open format), some called "model exercises" (p. 247) were also given, in which students combined sentences by selecting syntactic structures (transformations) in imitation of a model essay containing many instances of one kind of construction or another. One might, therefore, regard these model exercises as "semi-cued" sentence combining. The model exercises in the Miami study "emphasized the use of nonclausal free modifiers, virtually to the exclusion of subordinate clauses" (p. 255). They operated in a semi-cued manner, and yielded posttest changes confined exclusively to nonclause structures — that is, clauses per T-unit remained constant, while words per clause increased. My guess is that if some of the completely uncued whole-discourse exercises, perhaps one out of three, had been cued for specific nonclausal combining, the clause-lengths could have been pushed *all the way* from the level of Hunt's twelfth graders to that of his superior adults, instead of only one third of the way (Morenberg, Daiker, Kerek 1978: 254-5). After all, Stewart (1978c) produced exactly these large gains by devoting half of his treatment time to imitation of Christensenian models. And O'Hare (1973) used cued exercises to induce his seventh graders to write more clauses per T-unit than Hunt found among twelfth graders and adults. Why couldn't the Miami researchers have done as well with nonclausal structures? I think they could have, had they intermixed cued exercises with those in open format. Had they also incorporated lessons on invention, mindful that the elaborating content of more mature writing is *added* content, they might have done even better yet. Future research studies may settle the matter.

Recently, as consultant to the National Assessment of Educational Progress (NAEP), in attempting to design a cuing format enabling NAEP to examine sentence combining skills in its cycle-three Writing Assessment,[17] I was asked to develop the simplest possible cuing scheme that would lead to a particular target sentence, simpler even than O'Hare's format. Suppose a target sentence were the following:

> His friends felt strongly that it was wrong for Frank to give up playing serious golf before he found out whether he could finally perfect his putting, which was the one weakness in his game that kept him from making the college team.

The simplest scheme would be to list the constituent sentences in their surface-structure transforms, like this:

> His friends felt strongly _____
> that it was wrong _____
> for Frank to give up playing serious golf
> before he found out _____
> whether he could finally perfect his putting,
> which was the one weakness in his game
> that kept him from making the college team.

But this format permits, even encourages, mere copying, which students can perform on a word-by-word basis without processing the complete sentence. And the crucial difference between the old slateboard copying exercise and sentence combining is that the latter requires repetitive and intensive processing of the sentence as it is built up one part at a time, such that one "hears" its formation in one's mind as each addition occurs; whereas copying a sentence need be no different from copying a list of random words, or random phrases. Why not, I reasoned, show the constituent sentences untransformed, then follow each one in parentheses by the word or words with which its transform will begin, relying upon the student's tacit grammatical knowledge to dictate whatever changes occur subsequently in the sentence? The instructions for such minimally-cued exercises would be the following:

1. Start with the top sentence and combine the others into it one by one, saying it over to yourself each time to be sure it sounds right.
2. Begin each sentence with the word(s) in parentheses, and make whatever other changes are needed to make it sound right.
3. SOMETHING stands for a blank, a place to write the next sentence.
4. If no signal is given, combine the non-repeating part as a modifier.

Any secondary or college student can learn to follow this format after two or three brief instructional sessions. The above sentence would be formated as follows:

His friends felt SOMETHING
it was wrong SOMETHING (that)
Frank gives up playing serious golf (for Frank to)
he found out SOMETHING (before)
he could finally perfect his putting (whether)
putting was the one weakness in his game (, which was)
the weakness kept him from making the college team, (that kept)

I make no great claims for this particular cuing format, except that most people who try it and know O'Hare's work say it seems "simpler" or "more straightforward" than his x-ing out, uppercase morpheme, and italicized-modifier cues (O'Hare 1973: 93-101, and 1975). The main point is that this format, like O'Hare's, allows any student to sentence-combine any mature structural configuration the exercise-maker selects.[11]

Concluding, I think the optimal plan for pedagogical success with sentence combining is to use simply-cued single-sentence problems illustrating notably mature syntactic configurations, intermixed with open-format whole-discourse exercises, with the latter discussed in class. I recommend a schedule of two cued problems daily on average, and two whole-discourse exercises per week. This schedule would work both in high school English classes and in college composition courses, and allows ample time for other kinds of compo-

sition teaching as well. Although I certainly support grammar teaching at the secondary level, it strikes me that the lessons on grammatical structures and terminology in the Daiker, Kerek, and Morenberg textbook (1979a) are unnecessary, and duplicative in cases where grammatical terminology has been properly taught in the junior and senior high grades. Their open whole-discourse exercises, however, seem excellent. Similarly, I find Pitkin's (undated) nomenclature of ideational relationships obvious and essentially unneeded — a grammar of discourse blocs, as it were, which can no more be applied consciously by writers, who already have it internalized tacitly anyway, than a grammar of sentences can be. But Pitkin's text presents some outstanding sentences for cued-format exercises, and deserves to be made available as a sourcebook for teachers if not an actual student text. Strong's forthcoming book (in press) using cued whole-discourse problems may or may not prove a swing too far in the direction from open to cued format. Other sentence-combining materials are in various stages of preparation, and developments in the next few years should prove fascinating.

Conclusion

I began this paper by referring to a time twenty years ago when a wise teacher showed a beginner how to do sentence combining. Only it wasn't called that, was hardly used at all, anywhere, and loomed in the consciousness of no one. But Noam Chomsky's transformational grammar changed all that, just as it changed so many aspects of our understanding of language and mind. I think Kellogg Hunt would be the first the acknowledge, as do I, that the Hunt research and the Mellon study, the ideas of syntactic maturity and transformationally organized sentence combining, and all the important work that has followed upon them, particularly that of Frank O'Hare, William Strong, the college sentence combiners, and the many other researchers engaged in broadening and advancing our understandings — that all this would never have occurred had it not been for the appearance of Chomskyan linguistics.

To reiterate my opening remark, I think the Miami conference will stand as a landmark in the history of sentence combining. I have tried to recount some bits of that history that have gone unrecorded, trivia really, and to correct some errors that have occurred in the written statements of others. I have placed into perspective the developments since the first studies that have brought sentence combining to maturity. I have suggested new ways of looking at the questions of learning and growth associated with the development of syntactic fluency, new ways I believe important enough to bear immediate investigation; and I have mentioned certain research priorities and caveats. Finally, I have made the case for a blending of cued and open-format exercises, believing it to be the key to the long range success of sentence-combining methodology, the one thing necessary to insure that sentence combining will neither lose its essential original character, nor fail to accomplish the objectives first hypothesized for it.

What I want to say now, to all teachers, is that sentence combining is ready for classroom use. To be sure, more research on anything is always helpful: the three-year junior high study I mentioned will be especially important, and we are going to see experiments using materials on cohesion, transition, and style. But there is a time for caution and a time for action, and with sentence

combining, the time for action has arrived. Sentence combining produces no negative effects, and works better than most of the activities in current composition teaching. Only the most egomaniacal teachers will refuse to convert a portion of whatever they are now doing to sentence combining. I *could* not have said this twenty years ago, and *would* not say it, at least not this flatly, ten years ago. For now we can brush aside the research reviewer's ritualistic caution, "more research is needed."[19] More research on sentence combining is *not* needed, though more is welcome and more will be done. In fact, however, I don't know of any component in our arsenal of literacy-teaching methods that is better supported empirically than sentence combining. At the risk of sounding like a sloganizer from the Sixties, the best advice I can give teachers today, relative to sentence combining, is — Do it!

NOTES

[1]Anticipating queries from persons who have been misled by erroneous commentaries on sentence-combining research (Part Three of this paper), I state the following: Bateman and Zidonis (1966) investigated parsing, not sentence combining. Raub (1966) and Ney (1966) used oral exercises and no multiple embeddings. Hunt's first reference to a "sentence-building program" dealing with "sentence-combining transformations" (Hunt 1964: 147), and its later variant (Hunt 1965a: 156), resulted at least in part from our conversations and exchange of ideas in 1962 and 1964, as I indicate later in this section.

[2]Ney (1966) reported a study of the effects of practice in combining *pairs* of sentences, exactly as Roberts' text illustrated. Obviously these sentences offered no practice in multiple embeddings. For this reason I knew, when I read his article in 1966, that Ney, like Roberts, had not beaten me to the punch. For the *sine qua non* of sentence combining, I then recognized, had to be problems consisting of *many* constituent sentences combined in concert within a single sentence.

[3]I am indebted to Charles Cooper, who in 1973 shared with me his research into the many textbooks since before the turn of the century, but largely in the 1920's and 1930's, that incorporate exercises directing students to combine two or more sentences into one. These exercises are without exception few in number in any one book, quite plainly seem incidental in the author's consciousness, and lack cuing schemes.

[4]Sherwin footnotes, on page 150, one or two of the same textbooks Cooper later included in the list he gave me.

[5]For various reasons, I have refused offers to expand this text into a commercial venture, and I have given away all but five or six "museum copies." But I would be happy to donate the text outright to anyone willing to reproduce it for a wider group of interested persons.

[6]Bateman and Zidonis's (1966) mention of Hunt's 1964 report, in the text and bibliography of the 1966 NCTE monograph version of their own study, turns out to be anachonistic and thus gratuitous, since Hunt's report had not been written during the 1962-63 and 1963-64 academic years when Bateman and Zidonis designed and conducted their experiment in the University School at Ohio State University.

[7]O'Hare (1973), in an unreferenced statement, makes a point of saying, "Mellon originally planned an analysis of error incidence but abandoned the project as too time-consuming and expensive" (p. 7). Where O'Hare got this idea, I have no notion. I took every precaution to prevent an error orientation, however slight, from creeping into my experiment, since that factor more than any other, in studies set within the grammar curriculum, has tended to bias and distort results.

[9]Obviously, many other terms and operations were included in the students' grammar curriculum, but they did *not* play an operative role in the sentence-combining practice carried out during the five-month treatment period, a fact completely ignored by O'Hare in the dense smokescreen of words (1973: 9-15, 18, 25-32) with which he obscures nearly all the real issues in the grammar/no-grammar argument. The five teachers who taught my sentence-combining program believed grammar an important subject for children to know, quite apart from the sentence-combining regimen, as do many teachers, and found my simply-structured transformational textbooks an improvement over traditional grammar. The text purposely avoided usage, spelling, and punctuation lessons, which otherwise might have promoted errorphobia and inhibited student writing. The seventh-grade students began the year excited about their new grammar, and as time wore on, experienced the same ups and downs of motivation, and the same occasional learning difficulties, students typically encounter in conceptual study — for example, in their math and science work. But in each lesson the students learned the content well enough to perform the exercises associated with the lesson — which, in the second half of the text, were the sentence-combining problems. The grammar study was neither odious nor incomprehensible to the students, as O'Hare baselessly implies it must have been, and all the students (though some with more difficulty than others) did in fact work out the sentence-combining problems as assigned, exactly as I reported they did, despite O'Hare's equally baseless implication that they couldn't have and/or didn't.

[10]O'Hare repeatedly states that the empirical design of the Mellon study prevents separation of its grammar-study effect from its sentence-practice effect. In so doing, O'Hare ignores the first principle of experimental research, namely, that one undertakes an empirical exercise only when a particular hypothesis cannot be confirmed or rejected on the basis of available data, and/or on rational ground alone. My discussion of the Bateman-Zidonis hypothesis (1969: 13-14), and of the impossibility of directly applying transformation rules (pp. 20-21), rejected the possibility of a "grammar-study effect" to the satisfaction of everyone else (so far as has been reported to me) who has read it. In short, there *was* no grammar-study effect to control for empirically, any more than reason would indicate that the students' luncheon menus, or the instructors' hat sizes, would have caused effects needing to be controlled. Curiously, O'Hare assents to exactly this position when he writes, "Since the present researcher agrees with Mellon's able rejection of applied transformation rules and traditional sentence parsing [as treatments promoting syntactic fluency], nothing more need be said here about them." (p. 25). O'Hare obviously does not realize he has just denied the possibility of a grammar-study effect, and has mooted the entire question of the curricular location of sentence-combining exercises, as between the grammar class and the composition class.

[11]In addition, the sample sentence-combining exercise Stotsky takes from Mellon and shows in Table 1 (Stotsky 1975: 50) contains three errors, and her synopsis of the "Structures Practiced" in the Mellon study, Table 2 (pp. 56-57), mentions nominal clauses and phrases, but omits relative clauses and their pre- and post-noun reductions, which far outnumbered the nominals in Mellon's (and thus O'Hare's) program.

[12]It is worth noting, since my explanation is couched in grammatical terms, that merely because a researcher *speaks about* language operations technically, one should not conclude that a person whose speech or writing uses them is technically aware of those processes, or needs to become so aware. From the point of view of linguistic description, one can't ask the time of day without "using" transformations, though of course utterly unconsciously. A naive and misleading discussion founded exactly upon the misconception I am referring to, for example, occurs in the penultimate paragraph of a recent sentence-combining study (Morenberg, Daiker, and Kerek 1978: 255).

[13]Morenberg, Daiker, and Kerek (1978) recently stated, "Experimental gains in syntactic maturity without a corresponding improvement in writing quality (cf. Mellon, 1969) could be rejected by critics as irrelevant to the basic concerns of the composition

class" (1978: 253) Of course they could be, but should they? Syntactic maturity, or fluency, is defined by numbers of things — words, clauses, and so forth. Slight increases in these numbers will not affect overall-quality judgments, which cannot be tuned very finely. On the other hand, large syntactic-fluency increases must inevitably, sooner or later, boost quality scores, unless one believes large groups of young people can be trained regularly to prefer and to write elaborated gibberish. My own view is that, from the O'Hare study to the present, the concern for immediate overall-quality improvement represents a turning away from serious writing research and a surrender to the main chance of touting one's experimental treatment as a classroom-ready pedagogy.

[9]Space does not permit an illustrative listing of dominant NP's from mature prose in a variety of modes, but readers can readily compile such lists themselves. In traditional terminology, dominant NP's are those functioning as subject, object, or subject complement of the verb in any main clause, or as object within any prepositional phrase modifying any main-clause verb, exclusive of nonrestrictive constituents. Obviously, I am not referring here to "bad" long noun phrases, against which Christensen inveighed (1968b), or to definitional phrases that can be replaced by the word each defines, as in Moffett's example of "dregs" replacing "what is left in the cup after you finish drinking" (1968: 174).

[10]The misconception originates in Hunt's 1964 study, in a remark the author attributes to a colleague whom he had asked what she supposed his study would uncover. The colleague replied:

> Why it's obvious. After thousands of hours of work you'll find out that younger children write as sentences what older children would reduce to phrases and words (p. 141).

Acknowledging that he viewed his findings in this light, Hunt revised the conclusion of his study for its 1965 NCTE publication by including an immature fourth-grade prose narrative of twenty sentences, then suggesting that the task of the English curriculum might be to convert that piece to normal mature writing by teaching students "to reduce independent clauses to subordinate clauses and nonclauses, consolidating them with adjoining clauses and T-units" (Hunt 1965a: 157). While not incorrect as far as it goes, the above characterization tells only half the story; much of the reduced sentential content in mature writing is totally absent from the writing of children.

[11]I took Miller's course in the fall of 1964.

[12]For what it may be worth, this sentence is a paraphrase of a sentence in Richard Larson's "Structure and Form in Non-Fiction Prose," in Tate (1976).

[13]In pre-assessment field trials we learned that nine- and thirteen-year-olds cannot grasp and follow even the simplest cuing instructions, when introduced under NAEP test conditions. Thus it was decided that the NAEP sentence-combining exercises would have to be open format, and that is the kind incorporated in the cycle-three (1978-79) Writing Assessment. But this does *not* mean that non-technical cuing formats cannot be fully learned in parts of two or three regular class periods. They can, as every teacher knows who has taught them.

[14]I was surprised but pleased when William Strong announced at the Miami Conference that his forthcoming book, *Sentence Combining, Paragraph Linking* (Random House, in press), will incorporate a cuing system into the sentences it gives in whole-discourse exercises. Here is an excerpt from one such exercise:

24. We can define sincerity.
    25. The definition is in terms of synonyms.
    26. The synonyms are honest. (SUCH AS)
    27. The synonyms are _____.

or

    28. The synonyms are _____.
    29. The openness is emotional. (;)
30. We can think of its antonyms.
    31. The antonyms include phoniness.
    32. The antonyms include _____.
    33. The antonyms include _____.

34. Sincerity occurs.
    35. We trust another person. (ONLY WHEN)
    36. The trusting is full.
    37. We feel SOMETHING.
    38. We are fully accepted. (THAT)

    39. An individual feels SOMETHING. (IF)
    40. Another person is critical. (THAT)

or

    41. The criticism is secretly.
    42. Another person is "two-faced." (THAT)

We see that Strong is now left-spacing main-clause sentences, and cuing subordination in the manner I have just illustrated, by means of "SOMETHING" indicating nominal slots, and parenthesized post-sentential subordinators. The brackets cue compounding, and provide the desired conjunction. The blanks Strong calls "cloze signals," places where writers supply their own lexical content — a modest step towards introducing invention into sentence combining. I do not know whether Strong has given up uncued exercises entirely in his new approach, but I believe it would be a mistake to do so, in any case.

"For a recent example of unwarranted caution, see pages 83-84 of Elizabeth Hayne's "Using Research in Preparing to Teach Writing," in the December 1978 *English Journal*. Saying at this juncture that sentence combining needs more study is like telling Thomas Edison his light bulb needed more work just after he'd thrown the switch illuminating the streetlights of New York.

SENTENCE COMBINING, STYLE, AND THE PSYCHOLOGY OF COMPOSITION

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Richard Ellmann reports that James Joyce frequently walked the streets for hours on end, arranging and rearranging the words of a single sentence, until, to quote Joyce: "I found the right ones" (Ellmann 1959:410, 417). I do not cite Joyce's custom of working and reworking his syntax because I wish to enshrine his name in the pantheon of people who have benefitted from sentence combining — though he seems to have practiced it regularly. Nor do I bring up Joyce's habit of experimenting with various sentence combinations out of a belief that *Finnegans Wake* is an example of the kind of inflated and turgid prose that Francis Christensen feared sentence combining might ultimately produce (Christensen 1968b:575). I refer to Joyce's arranging and rearranging each of his sentences because our reflecting on his search for the best combinations might help us understand the process that sentence-combiners go through when they consider their own stylistic options.

Of course, we do not have complete records of the combinations Joyce formed and rejected; but it almost seems as if he followed the advice of the texts on sentence combining. Ellmann reports that he would sound out various syntactic arrangements, and only after having listened to different options would he stop to write down the sentence that sounded the best. We therefore shall have to work backwards from the text Joyce produced to reconstruct what might have transpired if he went through the process of combining kernels.

Since it is a commonplace among linguists that one does not have an idea until one has expressed it, we can assume that Joyce, like all writers, intuited that sentences, since they contain complete thoughts, express propositions about how we perceive the world. To select a particular syntactic structure is to choose to mean and be understood in a specific way (Ohmann 1966:259-60). That this is so can be seen by conjecturing on how Joyce might have written the sentence that concluded his short story "Araby." Here are some of the options that could have occurred to him:

1. I gazed up into the darkness and saw myself as a creature driven and derided by vanity.
2. To gaze up into the darkness was to see myself as a creature driven and derided by vanity.
3. Gazing up into the darkness I saw myself as a creature driven and derided by vanity.

The first thing that we should note about these sentences is that they all may be derived from the same set of kernels.

4. I gazed up into the darkness.
5. I saw myself.
6. I was a creature.
7. Vanity drove the creature.
8. Vanity derided the creature.

That the three combinations that Joyce could have produced share the same lexical content means that what distinguishes each of them and causes them to carry three quite distinct meanings is differences in syntactic arrangement (style). To see that each of these sentences contains quite distinguishable and separate propositions, let us look at them again and note how they might be paraphrased. In the case of "I gazed up into the darkness and saw myself as a creature driven and derided by vanity," the author, by joining two independent clauses and deleting the understood subject, has created a causal statement which might be paraphrased thus: "I gazed up into the darkness and, as a result, saw myself as a creature driven and derided by vanity." Turning to the second sentence ("To gaze into the darkness was to see myself as a creature driven and derided by vanity"), we are struck by how the infinitive phrases endow it with a timelessness and generic quality. It has the appearance of a universal conditional that might best be paraphrased as: "Whenever I gazed into the darkness, I saw myself as a creature driven and derided by vanity." Finally, in the case of the third sentence ("Gazing into the darkness I saw myself as a creature driven and derided by vanity"), the use of the present participle particularizes the event so that the following paraphrase is produced: "While gazing up into darkness, I saw myself as a creature driven and derided by vanity."

That an author by manipulating his syntax could yield such distinct propositions is quite significant. It suggests that a common cognitive process informs all sentence-combining activities. Students and professional authors alike, in assessing their stylistic options, are also deciding what stance to take toward their subject matter and toward their audience. To perceive that sentence combining contains its own heuristics should enable us to draw some conclusions about what happens when our students practice it.

To begin with, the very act of combining kernels can help students to discover ideas. This is because to choose a particular syntactic order is to choose to conceive of one's world in a particular way, to the exclusion of other equally valid ways. In other words, the combinations one selects mirror how one has decided to sort out the phenomena of experience (Ohmann 1967:407). To see how this is so, let us consider what happens when these two kernels are combined:

1. He is responsible.
2. He is the man.

Should a student combine these two kernels so that they result in a sentence that reads "He is the responsible man," the student would be claiming that the sentence's subject is a person who is always responsible. On the other hand, should the student's sentence combining yield "He is the man responsible," the student would be claiming that he perceives that the "responsibility" of the man he is writing about is limited.[1] Sentence combiners, it would seem, know that the responsible man is not always the man responsible. Their syntactic choices reflect judgments they have made about their subjects.

Sentence combining does more than force students to make judgments about the content of their sentences. It also forces them to make judgments about their audience. Consider the options available to students asked to combine these two kernels:

1. Those students practiced sentence combining.
2. Those students improved as writers.

Among the combinations that might be produced, let us look at two that show how the act of combining forces writers to assess the pre-knowledge of their readers.

> Those students, who practiced sentence combining, improved as writers.
>
> Those students who practiced sentence combining improved as writers.

In the case of the first sentence, the fact that the relative clause is non-restrictive implies that the author believes that his audience knows who "those students" are. In the case of the second sentence, the relative clause tells which students improved, those that practiced sentence combining. Its author had determined that his readers needed additional information in order to identify who improved.

Even when students have only two possible combinations available, their syntactic choice continues to reveal what they have assumed about their readers' knowledge. For instance, a student is likely to write "Heorot was destroyed by fire" if he thinks that his readers know about the gold hall in *Beowulf*, but not about its destruction. On the other hand, a student is more likely to write "Fire destroyed Heorot" if he thinks his readers know about the destruction, but not about the cause.

The realization that our students by exercising their syntactic options are also adopting points of view has important ramifications for the pedagogy of sentence combining. First of all, it lays to rest Moffett's fears that sentence combining may "enhance facility while neutralizing the compositional judgment which should accompany it" (1968:170). Sentence combining, as we have seen, requires students to make judgments every time they examine their syntactic options. Secondly, it explains why researchers such as Daiker, Kerek, and Morenberg have reported that "Sentence-combining exercises may only negligibly affect writing if students perform them mechanically. . . ." (1978:40). Undergraduates who do not examine the presuppositions that inform why they have chosen to combine kernels in a particular way remain unconscious of the power of syntactic combinations to convey different ideas. They are not exercising their stylistic options in a way which will lead them to discover what they want to say. Thirdly, to recognize that sentence combining properly practiced is inherently "guided by [the writer's sense of] purpose" means that sentence combining has gone beyond the notion that "complexity equals maturity" and is now, de Beaugrande's claims to the contrary, being enriched by an "awareness of what motivations writers and responses of readers are related to syntactic formation" (Beaugrande 1978:136).

Equally important, the discovery that sentence combining requires the writer to take a stance toward his subject and toward his readers means that our students might benefit by having their combinations subjected to stylistic analyses. Such stylistic analyses would allow students to assess how well they had controlled the kernels that they had combined. What is more, because paraphrases would enable students to articulate what they thought their

combinations said, stylistic analyses would help us as teachers respond to a question that we all have heard in sentence combining classes: "My sentence is different. Does it say the same thing?" To illustrate how such stylistic analyses might work, suppose your students had been asked to combine the following kernels (from Strong's *Sentence Combining: A Composing Book*):

1. Television can help us see.
2. We see the pattern.
3. The pattern is life.
4. The life is in America.

Suppose that these are some of the sentences that were produced in your class:

1. Television can help us see the pattern of life in America.
2. Television can help us see the American pattern of life.
3. The pattern of life which is American can be seen on television.

You and your class immediately note that these combinations involve different interpretations. The question is how to make these interpretations explicit in a way that will make your students more conscious of the significance of their stylistic options. You might begin by pointing out that while the first two solutions contain all of the content words (nouns, verbs, adjectives, etc.) found in the kernels, the third sentence ("The pattern of life which is in America can be seen on television") has omitted *help* and has, in effect, substituted *someone* for *we*. This sentence might be paraphrased "Someone can see the pattern of life which is in America on television." The author of this sentence is not controlling his kernels as well as he might. In talking about the first two responses, you might point out that the student who wrote "the American pattern of life" presupposes that not only is there a pattern of life, but the pattern of life is American. The student who wrote "Television can help us see the pattern of life in America," by contrast, is asserting only that a pattern of life exists in America that can be seen on television.

The importance of this kind of stylistic analysis through paraphrase is that it allows our students to raise to conscious control their innate intuitions about what the sentences mean that they have produced through combining. It gives them a test that will allow them to see whether their combined kernels mean what they wanted them to mean, and it demonstrates the usefulness of sentence combining exercises in promoting the kind of stylistic sensitivity characteristic of mature writing.

NOTES

[1]For a detailed account of the grammatical framework on which this analysis rests, see Malmstrom and Weaver 1973: 189-90.

[2]See Daiker, Kerek, and Morenberg 1979a:121. This is the first sentence-combining text that provides the kind of stylistic analyses advocated in this article.

MEASURING THE EFFECT OF SENTENCE-COMBINING INSTRUCTION ON READING COMPREHENSION

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Sentence-combining instruction has been shown to be effective in enhancing growth in syntactic fluency in the written composition of elementary, secondary, and college students (Combs 1975, Mellon 1969, O'Hare 1973, Ofsa 1974, Perron 1974, Sipple 1976). This has led writers to hypothesize that sentence-combining instruction would also effect significant growth in reading comprehension (Sternglass 1976, Stotsky 1975).

This hypothesis has been developed because of the high relationships that have been found between performance in reading comprehension and performance in written composition (Evanechko, Ollila, and Armstrong 1976, Loban 1976, Strickland 1962, Vairo 1976). The assumptions underlying this hypothesis are that sentence-combining instruction affects growth in students' syntactic competence and that syntactic competence has been shown to underlie the constructs of both reading comprehension and syntactic fluency (Guthrie 1973, Hunt 1965, Pearson and Johnson 1978, Rummelhart 1975, Shackford 1976, Strickland 1962, Wisker 1976). It would seem reasonable, then, to hypothesize that instruction, such as sentence-combining instruction, that effected growth in syntactic fluency (i.e. syntactic competence) would also effect growth in reading comprehension (Stotsky 1975).

A number of researchers over the past ten years have proposed to study this hypothesis. However, results of these research studies have not been consistent with each other, so that no general conclusions can be drawn from the body of literature. Hunt and O'Donnell (1970) found significant gains in comprehension as a result of sentence-combining instruction for black students but not for white students. Fisher (1973), Combs (1975), Hughes (1975), Levine (1976), and Straw (1978) have all reported significant gains on some measures of comprehension, but not on others. These results might lead to one of two conclusions: either sentence-combining instruction does not have a definite effect on reading comprehension; or measures researchers have employed in these studies have not been sensitive to the reading comprehension gains made by students studying sentence combining.

The purpose of this paper is to review the validity and appropriateness of measures employed in these studies in an attempt to draw some realistic conclusions about the effect of sentence-combining instruction on reading comprehension.

Measuring the Construct of Reading Comprehension

The act of reading has traditionally been broken down into two major areas: decoding (identification of the graphic symbols and the association of those symbols with the phonemes of the language) and comprehension (the interpretation of the graphic symbols and an understanding of the ideas symbolized by them) (Dechant 1970, Dechant and Smith 1977). On the other hand, recent reading researchers have identified at least three basic competencies underlying reading. Goodman (1973) has referred to these three competencies as "cue systems" (p. 25) and has named them *graphophonic* (a combination of knowledge of both the phonological and graphic systems of

the language and their interrelationships), *syntactic* (the knowledge of the grammatical rules of a language), and *semantic* (the knowledge of the meanings encoded in language). Pearson and Johnson (1978) have identified three roughly analogous sets of knowledge necessary for reading. Goodman (1973) and Rummelhart (1975) further emphasize that all three systems operate simultaneously and interdependently during the act of reading.

As identified, graphophonic knowledge is more closely associated with the act of decoding, while syntactic and semantic knowledge are most closely associated with the act of comprehension.

In studies of the effect of sentence-combining instruction and practice on reading comprehension, researchers have purported to look at the effect of instruction not on the graphophonic (decoding) element of the reading act, but on the syntactic and semantic aspects, that is, the comprehension aspects, of the reading act. This seems appropriate in that there is little theoretical basis for the belief that sentence-combining instruction would have any effect on students' abilities to decode words, but compelling evidence that sentence combining could affect students' abilities to comprehend material.

Some researchers in the field have proposed that we measure *only* the syntactic component of reading comprehension, since sentence-combining instruction was designed specifically to teach syntactic competence. However, if we only measure the syntactic component of reading, then we are not, in fact, measuring reading comprehension as a total construct. We have established, through studies in written composition, that sentence-combining instruction significantly affects students' syntactic competence. However, that is not the research question being asked in these studies. The question being asked in the research is: Knowing that sentence-combining instruction affects the syntactic competence of students, what is the effect of such instruction on the other aspects (i.e. semantic competency) of the reading comprehension construct, as well as the syntactic component and, therefore, on the whole construct of reading comprehension?

Thus, measures of reading comprehension used in studies of the effect of sentence combining should not be measures that assess only a student's syntactic competence in reading because, if that is all we measure, we cannot claim that sentence-combining instruction has an effect on reading comprehension as a whole, but only on the syntactic aspect of reading comprehension. By the same token, we should not employ measures that only measure the semantic aspect of reading comprehension with the syntactic element parcelled out, for the same reason. The ideal measures of reading comprehension in studies of sentence combining should, it would seem, measure both the syntactic and semantic aspects of reading while not measuring the graphophonic aspect of reading.

Having developed that premise, I would now like to review a number of studies investigating the effect of sentence combining instruction on reading comprehension and compare them to the above "ideal."

It will be impossible to discuss each of the tests used in all the studies in the context of this paper, so I have selected representative examples of measures from the work of Hunt and O'Donnell (1970), Fischer (1973), Combs (1975), Levine (1976) and Straw (1978).

Standardized Tests of Reading Comprehension

Standardized reading-comprehension tests have been criticized for being insensitive to gains made in reading comprehension as a result of sentence-combining instruction (Combs 1975). Another criticism of standardized tests has been that they have not parcelled out decoding ability from reading-comprehension ability so that it is often unclear whether skill in decoding or ability in comprehension is being measured (Spache 1976).

Combs (1975) and Hughes (1975) both administered the comprehension subtest of the Gates-MacGinitie Reading Test (Gates and MacGinitie 1965) to subjects in their studies. Neither found significant differences between the sentence-combining group and the control group on this measure. A review of this subtest indicates, however, that the Gates-MacGinitie measures the semantic component of reading comprehension almost totally and does not attempt to measure the syntactic component. An example from the test is included below:

> "Mother and Dad had been shopping. When they returned, they brought new skates for the twins. The children were very (1) . They put them right on and went (2) ."
>
> 1. unhappy empty short heavy happy
>
> 2. swimming skating sledding walking reading
>
> — from Test D, Form 1
> (Gates and MacGinitie 1965)

As is evident in this example, minimal knowledge of syntactic structure is required for completing the task of choosing the correct words. The emphasis is obviously on the semantic competence of the reader. Furthermore, like all standardized reading tests, decoding ability has not been separated from comprehension ability.

Because of these constraints, it might be concluded that the Gates-MacGinitie comprehension subtest is inappropriate for assessing growth in reading comprehension as a result of sentence-combining instruction. A similar conclusion might also be drawn about the Nelson Reading Skills Test (Hanna, Schell, and Schreiner 1977) used by Straw (1978).

On the other hand, significant differences in favor of the sentence-combining groups were reported by Fisher (1973) and Levine (1976) when the paragraph-meaning subtest of the Stanford Achievement Test (Madden, Gardner, Rudman, Karlsen, and Merwin 1972) was used as a post-test measure of reading comprehension. On these tests, students were asked to read a paragraph, then answer a set of questions about the paragraph. A sample from a paragraph and the related questions are reproduced below:

> "Madame Tussaud's Waxworks has been in existence since 1761. This museum, as it is sometimes described, was located in Paris, but in 1802 it was moved to London . . ."
>
> 1. The first site of Madame Tussaud's Waxworks was in _____.
>
> 1. New York
> 2. Paris
> 3. London
> 4. Bordeaux

2. Today the museum is located in _____.

5. Bordeaux
6. London
7. Paris
8. New York

— from the Advanced Basic Battery, Form A
(Madden, Gardner. Rudman, Karlsen, and Merwin 1972)

Although the test is obviously testing students' recall of information and meaning (i.e. the semantic component of comprehension), the questions are stated in such a way that the test-taker must rely heavily on the ability to manipulate syntax in order to answer the questions. The fashion in which the test is presented seems to measure both the semantic and syntactic components of comprehension, as well as the decoding component, so that this seems to be a more valid measure of the reading-comprehension gains made by students exposed to sentence-combining instruction than the previous two measures discussed. Students who do well on the Stanford must, it seems, have developed a certain proficiency both in the semantic and syntactic elements of reading comprehension.

Cloze Tests of Reading Comprehension

The most widely used measures of reading comprehension in studies of the effect of sentence-combining instruction have been cloze tests. The cloze procedure has been employed by Hunt and O'Donnell (1970), Fisher (1973), Hughes (1975), Levine (1976) and Straw (1978). Hughes chose the cloze procedure because "[It] has long been considered by researchers as one of the more objective tests for measuring reading ability, particularly because it can operate independent of such variables as memory" (p. 39). Cloze-procedure tests require the reader to rely heavily on context to supply missing words (Rankin 1959), so that the cloze procedure may be more sensitive to growth in syntactic knowledge while measuring the entire construct of reading comprehension. Since sentence-combining instruction was primarily designed to increase students' syntactic competence, this type of test has seemed more appropriate than other more traditional tests in this research. The cloze procedure does not escape the fact that the decoding component of reading has not been eliminated, but proponents claim it is more sensitive to gains in reading comprehension than are standardized measures.

Traditional cloze tests (i.e. every-fifth-word deletions) have been employed by Fisher (1973), Hughes (1975), and Levine (1976). Fisher found significant differences in favor of the experimental group over the control group on only one of his three cloze tests, while Hughes and Levine found no significant differences. As pointed out by Rankin (1959), the exact comprehension processes involved in completing a cloze test are unclear; thus the traditional format may be inappropriate for sentence-combining studies.

On the other hand, Bormuth (1966) points out that traditional cloze tests are invalid measures of reading comprehension if material is too difficult for students. Both Fisher and Hughes derived cloze tests that may have been syntactically or semantically too difficult for students in the study, so that the results from their cloze tests may not aid us either in determining the effect of sentence-combining instruction on comprehension, or the effectiveness of the cloze test in measuring growth in comprehension as a result of sentence-combining instruction.

Hunt and O'Donnell (1970) employed a specially designed cloze test as the post-test measure in their study, and covaried the post-test scores based on the Nelson Reading Skills Test (pre-test). They reported significant gains for black experimental subjects over black control subjects, but did not report similar gains for white subjects. The cloze test used in the study was described by Hunt and O'Donnell as follows:

> This test differed from an ordinary cloze test in essential respects. Only certain kinds of words were omitted and those were not picked at random. They were what structural linguists used to call structure words, in contrast to form class or content words. That is, the words omitted were not nouns, main verbs, or adjectives, which carry much of the semantic load of a sentence. Those words were all given in normal order. Instead the words omitted were modals, personal pronouns, relative pronouns, conjunctions, prepositions, particles, expletives, etc., words needed to flesh out the other words into full sentences (p. 11).

Obviously, by Hunt and O'Donnell's statement, they were attempting to measure the syntactic component of reading comprehension rather than the whole of reading comprehension. In fact, it may have been possible that students were able to fill in the blanks on the cloze test without understanding the material, since many of the items could be filled in just from intuitively analyzing the structure of the text. An analysis of the test indicated that reading comprehension was not, in fact, being measured by the test, but rather only the syntactic component of comprehension.

A somewhat different cloze test was developed for the Straw (1978) dissertation. Analysis of the data from this test revealed a significant difference in favor of the sentence-combining group over the control group in performance on the measure. In this cloze test, only content words (nouns, main verbs, adjectives, and adverbs) were deleted from the passages given to students. Content for the passages was selected so that it was unfamiliar to subjects, thus decreasing the role of semantic competence in the task. The rationale behind this procedure was an assessment of both the semantic and the syntactic competence of subjects. Part of the semantic content was deleted so that subjects could draw both on their syntactic and semantic understanding of the passage to fill in the missing words.

How many subjects were forced to rely on semantic competence rather than syntactic competence is somewhat unclear in this case. Further investigation, it seems, needs to be carried out to validate this type of measure.

Other Measures of Comprehension

Two other measures of comprehension have been used that will be discussed here. The first, employed by Hughes (1975), was the Goodman-Burke *Reading Miscue Inventory* (Goodman and Burke 1971). Hughes found that the sentence-combining group made significantly fewer grammatical errors (miscues) than the control group. She also found that the experimental group made significantly fewer comprehension errors than the control group.

One of the major problems with employing the miscue analysis in a sentence-combining study such as this, other than the fact that it is a time-

consuming test to administer, is that it is not a test of reading comprehension. Rather, it is a diagnostic instrument which analyzes a student's weaknesses in word identification rather than a student's strengths in reading comprehension. The test was never designed to be a reading comprehension test, and it is doubtful that the instrument is a valid measure of a student's semantic or syntactic competence in reading.

The last measure of comprehension to be discussed is not a reading-comprehension test, either, but is the only measure discussed here that has succeeded in measuring the construct of comprehension without confounding the measure with decoding skill. The measure, employed by Straw (1978), was the paragraph-listening subtest of the *Durreil Listening-Reading Series* (Durrell and Brassard 1969), a standardized measure of listening comprehension. Sticht (1974) identified listening comprehension and reading comprehension as the same construct, and the fact that Straw found significant differences in favor of the sentence-combining group over the control group on this measure indicates that sentence combining can have a significant effect on language comprehension. The Durrell seems to be a valid measure of both the semantic and syntactic components of comprehension in that the material is designed to be unfamiliar to students on the one hand, and the eight passages in the test are written at increasing more complex syntax as the test progresses on the other. The task required of the students involved minimal syntactic knowledge (the questions are essentially written in a true/false format) so that a student's score is primarily the result of his understanding of the passage.

Conclusion

Research investigating the effect of sentence-combining instruction on reading comprehension has revealed somewhat ambiguous results. However, this fact may have resulted more from researchers' inability to measure reading comprehension ability validly than a lack of effect. The total construct of reading comprehension has not yet been defined, and new research is presently being done to further investigate the comprehension process. Furthermore, the "best" test of reading comprehension has yet to be developed. On the other hand, the research instruments that we as investigators have employed in studying the effect of sentence combining on reading comprehension have not necessarily measured the construct completely or in isolation from confounding variables, such as skill in decoding. However, as additional research is being done, and as more sensitive instruments are being developed, it seems that we are drawn to the conclusion that reading comprehension is positively affected by sentence-combining instruction and practice. In the six studies reviewed in this paper, seventeen different measures of comprehension were employed. Of these seventeen, nine indicated that sentence combining did, in fact, have a significant, positive effect on comprehension.

The literature, as yet, does not contain the definitive study, and many of the results and research methods are questionable. Nevertheless, as we review and critique the literature, I think we must admit that even though sentence combining does not seem to have as dramatic an effect on comprehension as has been reported in studies on syntactic fluency, sentence-combining instruction does seem to build increased syntactic competence and must,

therefore, affect a student's ability to comprehend written material more effectively.

EXAMINING THE FIT OF PRACTICE IN SYNTACTIC MANIPULATION AND SCORES OF READING COMPREHENSION

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There are a number of reasons why the research findings on the nature and effect of sentence-combining (SC) practice have been as productive as they have (see Stotsky 1975, Combs 1978). Investigators have kept in touch with one another's results, have built upon earlier studies, and have sought to handle few enough questions at a time to insure the reliability and credibility of studies as they proceeded. And, with a single exception, the results from SC research have been rather impressive for research in the teaching of English, a discipline not accustomed to noticeable and substantial progressions in empirical studies.

The single exception is the study of the correlation between SC practice and students' scores of reading comprehension at various grade levels. Informal discussions of SC and reading often imply that the fit is not a good one, a conclusion supported by several research studies. But in light of the compelling theoretical reasoning behind descriptive studies (Fagan 1975, Pearson 1974, Brooks 1977), one must closely analyze results that counter reasonable expectations. And since the combined results of studies on SC practice and reading comprehension are not unanimous, some effort to assess the relationship is still needed. For the present, then, one must either rely on the substantial theoretical arguments for the fit or conclude that ambiguous findings show a tenuous and possibly unsubstantial relationship. A look at both theoretical and experimental work illustrates why the choice came about.

The Fit: A Firm Theoretical Notion

The logic supporting a connection between SC practice and level of reading comprehension is relatively straight-forward. It actually comes out of the texture of assumptions in the philosophy of teaching and general learning theory. Teachers and experimenters alike have considered the interrelationship of the four language modes (reading, listening, writing, and speaking) an unassailable assumption: improvements in one mode are likely to be reflected in improvements in one of the others, or performances in one mode help chart changes in another (for instance, they hold that subjects' retelling of a story the subjects had read reflects comprehension of it [Goodman 1970]). Several successful approaches to language-arts instruction assume the primacy of speaking and listening, and consider experiences in these primary forms prerequisite for efficient and lasting growth in writing and reading skills (see Allen 1973, Moffett 1968).

Many sources relate how the language modes interrelate in classroom behaviors as well as in the mind: Ney (1974) and DiStephano (1978) are two recent treatments. Research funded by USOE must assume this interrelation. In fact, a model presented by Sticht (1978) is becoming a widely used pattern for selecting studies submitted for funding (see Figure 1 below). In the model, one can see that language development is essentially the interweaving of two movements, one linear (stage one through stage four) and the other reciprocal.

Note that the reciprocal movement not only includes the interconnection of environment, language, and cognition, but also applies to the interrelation of basic adaptive processes that are prerequisites (stage one) and precursors (stage two) of oracy (stage three) and literacy (stage four).

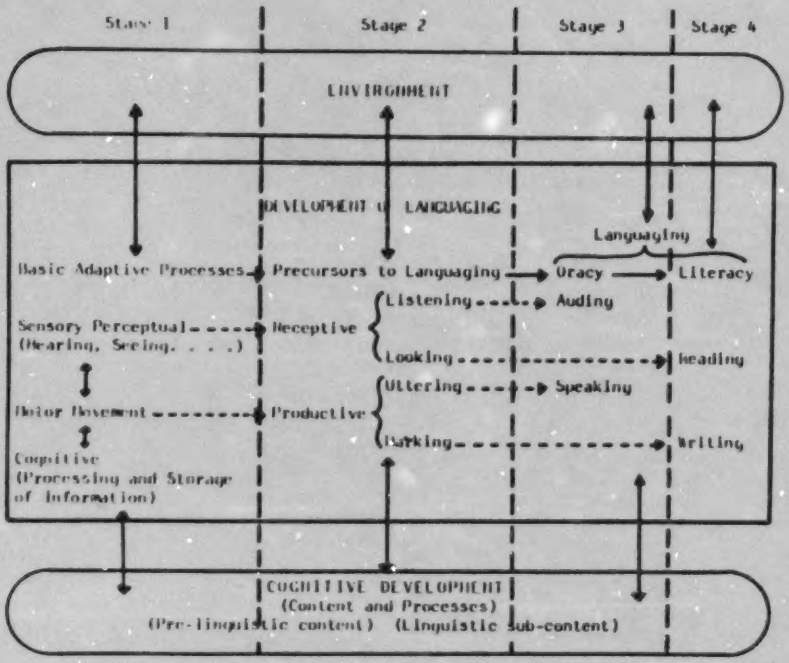

Figure 1. Overview of the developmental model of literacy.

Although Sticht does not thoroughly explore the connection between reading and writing (stage four), the implication is that they interact in much the same way as their precursors in stage two. More precise attention to the reading-writing fit is found in Stotsky's extensive review (1975) of writing activities (including, and especially, SC practice) and their effect on writing and reading ability. In a most thorough fashion, she recounts research that establishes a correlation between students' level of reading and their implicit knowledge of language structures. That is not to say, however, that gains in implicit knowledge of language cause gains in reading. In fact, Stotsky concedes that

> much more careful research is still required before one can state with greater certainty just what aspects of sentence structure affect ease of reading and precisely how (p. 43).

To illustrate this need for further research, Stotsky explores two closely related hypotheses: 1) "enhanced syntactic knowledge leads to improved reading comprehension," and 2) "enhanced syntactic skills through writing

activities leads to improved reading comprehension" (61). She shows that while none of the studies exploring these hypotheses establish either with certainty, they add incidental support to theoretical conclusions based on the logic implicit in the hypotheses.

At this point it is important to note that the theoretical conclusions concerning the interrelatedness of the language arts make up the heart of the language-arts curriculum. To take away belief in the interrelatedness is to wipe out the present notion of language-arts instruction. Stotsky makes this point in summary:

> Inasmuch as reading, speaking, listening and writing are all language-based activities, one can assume an interrelationship among all the language arts. It is theoretically plausible to maintain that growth in one area should be reflected to some extent in the other areas. It is also plausible to maintain that the nature of these relationships may change as children move into higher stages of intellectual growth. As older students begin to think with and about complex language structures in their efforts to write coherently, it is conceivable that these efforts could contribute to as well as flow from their linguistic and intellectual development. Thus, [a model of interrelationships] may account for the implicit or explicit reasoning that has led educators to expect not only improved writing ability from special writing programs but also gains in reading comprehension (p. 66).

It is the task of researchers to discover ways to explore the interrelationship more lucidly.

The Empirical Exploration

Since most educators assume that activities influencing one of the language arts influence the other to some extent, it follows that substantial influence of SC practice on writing will also influence speaking, reading and listening. But efforts to explore that influence on reading comprehension have produced ambiguous, even disappointing results. Researchers exploring the SC-reading fit register various conclusions, none of which are supported by the studies considered together.

Equivocal Results. It is interesting to note that the SC-reading question has been posed from the earliest SC research. O'Donnell and King (1974) and O'Hare (1973) included a reading measure in their experimental procedures. And both, for procedural reasons, questioned the credibility of their results. Obenchain (1971) reported that tenth-grade students taught by the investigator showed significant gains only in reading comprehension (Nelson-Denny Reading Test). Other students (taught by colleagues of the investigator) showed significant gains in vocabulary scores, but not reading comprehension. Teacher effect and size of SC corpus may have been responsible for the unclear results. Just recently, Ney found difficulty in obtaining acceptable interrater reliability in measuring gains with the Miscue Analysis Inventories (see Goodman 1973). The problems of testing reading comprehension are obvious in these studies.

Non-significant or negative findings. There are studies at all grade levels

that register non-significant changes in reading scores following SC practice. In fact, if sheer volume were the criterion for accepting or rejecting the fit of SC practice and reading comprehension, this conclusion would prevail: the affect of SC practice on reading comprehension is negligible. Shockley (1975), Callaghan (1977), Sullivan (1977), Straw (1978), Vaughan (1978) and Morenberg, Daiker, and Kerek (1978) all tested the hypothesis that an experimental group trained in SC strategies would score higher than a control group on a standardized reading measure. All found non-significant differences between the two groups at posttest time. A single study (Crews 1971) reported gains that favored the control group, but at less than the .01 level. Since no effort to explain the negative results were offered, Crews' results cannot be considered here. But the remaining studies are more completely reported and offer a substantial claim.

It appears that a number of factors would have accounted for the non-significant results. The duration of the treatments should be reconsidered. Except for Callahan's study, all treatments were fifteen weeks or less; Shockley's and Vaughan's were under twelve weeks, and Straw's was merely five weeks. It is, then, Callaghan's study that most seriously calls the soundness of the theoretical assumption above into question.

But other factors are to be considered. All studies (including Callaghan's) employed standardized reading measures that were written for the grade level of students studied. Materials on grade level may be appropriate for predicting the future success of students in reading comprehension (the primary use of reading-comprehension tests). But as a research tool for the purpose of assessing the fit of SC practice and reading comprehension, they may be inappropriate. Combs (1975) found that seventh-grade students receiving SC treatment did not improve in scores of reading comprehension when they took a test on passages written at their own grade level. But scores on a test written at a much higher level of readability and syntactic complexity distinguished the groups. It may be that a significant number of students scored at the ceiling on tests written at their own grade level. Scores reported in percentiles and/or grade-level equivalents hinder the detection of such a possibility.

Besides the appropriate choice of standardized tests, there are the limitations of standardized measures themselves. Stotsky (1975) considers that standardized test scores may not be appropriate for measuring the SC-reading comprehension fit.

> One possible source of difficulty in obtaining an appropriate evaluation of reading gains from a writing program focusing on the interplay of specific syntactic and semantic structures is the nature of the reading comprehension test used. Auerbach (1971) discusses the nature and limitations of several selected standardized reading tests. She points out such problems as the bias in the type of selections offered, the quality and function of the distractors, the degree of dependence on previous knowledge, and the importance of vocabulary itself. It is possible that qualitative changes in students' facility with a limited number of linguistic structures might not be tapped in one year's time (or less) by the typical standardized reading test (p. 60).

Positive Findings. Five studies and a preliminary report give partial evidence of positive influences of SC practice on reading comprehension. A preliminary report to the Western Michigan Research Committee (Hughes 1975) showed that gains in reading comprehension were made among those in the lower and middle groups of readers (specifically, on Miscue Analysis Inventories of grammatical strength and reading-comprehension strength). One group of students made significant improvements on a cloze test, but Hughes feels the selection of the cloze passage (literary topic) may account for the difference. And even though the study is insightfully designed and executed, the N of 12 is rather meager basis for conclusions of much certainty.

Fisher's (1973) study of the writing and reading progress of 94 fifth-, seventh- and ninth-grade students showed no significant gains in comprehension scores. The treatment may have been too short to effect significant gains in the older students. But more likely, the fifth-graders were affected over the same short time span because their language capabilities were less syntactically mature. Even though evidence from SC research suggests positive gains across ability levels at all grades for writing, the same may not be the case for reading.

This speculation is borne out in Stedman's (1971) study of the effect of SC practice on the reading comprehension of black and white fourth-graders. Cloze tests — with omissions of largely structure words — were created according to the transformations used in the treatment. Gains for the combined groups were significant at the .05 level. But further analysis showed that the significant gains came from the black groups (at the .01 level), not the white groups. Stedman concluded that the significant gains came as the black students acquired transformations they had not used earlier.

Combs (1975) found that seventh-grade students of various ability made across-the-board gains on reading tests written at the entering college level (Baldridge Reading Instruction Materials). Their posttest scores of reading comprehension were significantly higher than their pretest scores and the posttest scores of the control group. No significant difference on scores of reading comprehension were found on passages written on the grade level of the students. Only readability and T-unit analysis of the reading passages were completed prior to the treatment, so a correlation of sentence structures in the treatment and the passages was not established. Also, it must be noted that the reading score was based on ten items, hardly sufficient for compelling statistical analysis.

Two final studies, Olson (1978) and Straw (1978), add plausibility to the discussion of Stedman and Fisher. In her study of ninety-two fifth-grade students, Olson found that the experimental group registered no gains on the STEP reading test and Houghton-Mifflin Reading test after twelve weeks of SC practice. A teacher-made test consisting of patterns similar to those practiced in the treatment showed a non-significant trend in favor of the experimental group. The treatment consisted of general SC strategies, beginning with simple sentence transformations (see Mellon 1969 for examples). Olson concluded that the SC patterns used were too simple, so she regeared her design to test the response of her control group to SC exercises of greater syntactic complexity. Following this treatment, she administered two teacher-made tests of reading comprehension that indicated significant change

scores from pre to posttest.

Straw (1978) presented SC exercises to fourth-grade students for five weeks and followed them with an assortment of tests. Writing tests verified the rate of syntactic growth measured in earlier studies. A standardized reading test registered no gains. But cloze passages (every 5th word deleted) written at the fourth-, sixth- and eighth-grade reading level indicated significant different scores between control and experimental groups. In fact, the differences between groups rose markedly from the fourth-grade to eighth-grade passages. Therefore, Straw concluded that cloze passages uncovered a positive influence of SC practice on reading comprehension, especially on passages above the level of the students tested. A five-week study may not clear up the questions raised by earlier studies convincingly, but it does support the trend of studies finding a positive relationship between SC practice and reading

Conclusions

As a group, then, the empirical explorations of the fit of SC practice and reading comprehension remain ambiguous at best. Standardized measures consistently uncover non-significant or negative differences between experimental and control groups. The results of cloze tests are varied. And the results of special-made measures are largely positive. These results do not allow substantive conclusions; quite rightly, the conclusions advanced by most researchers are tentative.

At present, then, it seems that theoretical and empirical study combined can only *suggest* a close fit between SC activities and gains in reading comprehension. Research has just not established that fit with the kind of certainty one would like. Since reading competence precedes writing competence in syntactic complexity (Smith 1974), one is aware that SC exercises employed in the above studies have, by and large, given students practice with structures less mature than those needed to encourage gains in reading comprehension. This may mean that gains in reading comprehension may be limited to students with less syntactically mature reading skill. But whatever the case, the SC treatments and reading measures need to contain passages of greater syntactic complexity.

In short, the fit between practice with various kinds of SC activities and gains in reading comprehension is not completely known. But the corpus of studies reviewed here suggest that a definitive study of that fit seems quite possible. That is not to say that further research will pinpoint a methodology that will help teachers boost scores on standardized reading tests. But then, standardized reading test scores have always remained some distance from actual reading ability. What this research corpus recommends for a definitive study are more challenging SC exercises and tests of greater syntactic complexity. One would do well to follow these suggestions in considering further research.

PROSPECTS FOR SENTENCE COMBINING

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Consistently during the past decade research has demonstrated that time spent using and manipulating language improves student writing much more than does time spent formally studying and analyzing language. (A dozen exemplary studies include: Raub 1966, Ney 1966, Miller and Ney 1968, Mellon 1969, Vitale et al. 1971, Obenchain 1971, Fisher 1973, O'Hare 1973, Perron 1974, Combs 1975, Pedersen 1977a, and Daiker, Kerek, and Morenberg 1978.)

Since the findings of these studies speak well for themselves, it is not necessary to review what accumulated research into the effects of practicing sentence combining has established to date. It is necessary, however, to keep clearly in mind what the significance of all this research is. We must keep in mind Charles Cooper's conclusion that sentence-combining language experience repeatedly has been demonstrated to be the single most beneficial tool currently available to improve student writing (1975: 72-4).

This paper attempts to go beyond the accumulated research data that has led to this conclusion and speculates about the value and the effects of forms of language experience being adopted broadly across the English curriculum. Perhaps speculating about such things can be potentially profitable. It is possible that most of the ultimate purpose of this national conference on sentence-combining and writing improvement ought to be directed at the question "Where are we going from here?" — not, "What are we doing here?" "What *are* we going to do with this valuable tool to improve student writing?" "What *are* the prospects of the language experience approach for improving the language fluency and writing qualities of tomorrow's students?"

Some immediate work to be done by teachers, researchers, and publishers is sketched out in the six following job descriptions. First, we must labor vigorously to develop many different kinds of language experiences for the many kinds of students who can benefit from practicing them. For example, oral exercises for use in pre-school, kindergarten, and early grades must be made available, aimed at expanding early childhood language. Oral and written exercises enlarging upon the models of Cooper (1973), O'Hare (1973) and Strong (1973) must be developed and tested for use in the public schools, grades three to twelve. Efficiently administered and easily scored diagnostic testing devices, such as Hunt's "Aluminum Passage" (1970a), must be constructed and tested for general usefulness. In addition, oral and written materials addressing the needs of special-education children, English as a Second Language students, and various ethnic-group students must be developed. Signalled exercises for deaf students are needed.

That language experiences stimulate long-lasting growth in syntactic fluency, improvement in overall quality of writing, and development of perceived attributes of student writing are concepts only recently suggested and supported by research. But applied language-experience exercises in capitalization, punctuation, spelling, vocabulary, idiom and style have not been effectively developed or exploited yet. The list goes on. Exercises in eliminating student wordiness and influencing student conceptualization processes are need-

ed. Materials aimed at assessing the value of sentence-combining exercises to perform corrective functions — to eliminate errors from student writing — need to be developed and tested for their usefulness.

Simple processes and manipulations in syntactic fluency still offer numerous possibilities for development and expansion of curricular materials. For example, the simple assertion "It would be a pleasure to see all of us work on developing materials for a sentence-combining curriculum" is easily converted to the exclamation "What would I not give to see all of us work on a sentence-combining curriculum!" Further, once students have made complex sentences from simple ones, they should be able to reduce sentences with adverb clauses to simple sentences with simple modifiers as in "Bill was pushing this sentence-combining stuff wherever he could find a handler" to "Bill was pushing his business in every possible direction."

Briefly, the justification for developing many different kinds of language experiences for many kinds of students hinges upon the fact that there is little value in using formal language study to improve student writing other than to be able to identify and talk about elements of compositions (Braddock et al. 1963, Meckel 1963, Burton 1973). On the other hand, research into writing improvement reports several positive, enduring, better-writing-quality effects associated with sentence-combining practice. If these conclusions are correct, then traditional teachers of writing are in some ways analogous to driver-education teachers who teach effective freeway-driving skills mostly by naming and analyzing the parts, and the functions of the parts, or cars, but who fail all the while to accompany the students through actual driving situations demanding appropriate and effective guidance and responses.

Supporting this descriptive analogy is the fact that traditional views about writing and the teaching of writing have been shifting in recent years. In a modern context, *writing* has been defined as extending "the mind's action (through and in language) as it experiences, internalizes, feels, recalls, shorts, packages, and refines thought and experience." As with today's definition of writing, today's assumptions about writing depart from past assumptions. Today's assumptions are that writing is a process, not a product; that the writing process itself is more synthetic than analytic; that effective writing is more a function of creativity than a measure of correctness; that effective writing involves literacy, not literature; and that producing effective writing relates more to the experiencing, using and doing something with and in language than it does to segmenting language and talking about its functions and parts. These definitions and views reflect critical shifts in current thinking about writing as opposed to past. They foreshadow the fact that when people's views of and assumptions about something change, so will the methods they use to attack their problems. Thus, success in using sentence combining to improve student writing, not the failure of traditional approaches, is spawning new approaches to teaching the composition process.

The second labor that must be performed is that widespread adoption of language-experience materials and exercises must be achieved broadly across the language-arts curriculum. But formal-grammar approaches to the teaching of writing can not be enriched or replaced in the English curriculum until appropriate, tested materials are available to fill the present void. We must first, then, develop and expand language materials that work everywhere in

the English curriculum, including under rigorous test situations. Next, we must disseminate these materials once they exist.

Third, we can resolve here to place special emphasis upon developing language experiences that immerse would-be writers in the pre-writing, writing, and re-writing stages of the composing process. In this context *sentence-combining* or *sentence-building* exercises would suggest a broader, more inclusive term, *language experience exercises.*

Until recently the term *sentence combining* has been defined too narrowly. These language experiences have been viewed as "finger exercises," in the sense that they coordinate, habituate, and make fluent syntactic manipulations. They have been viewed as "rewriting exercises" in the sense that they involve the collapsing, rearranging, adding and deleting of ideas and structures in student writing. Sentence-combining exercises have been called "stylistic exercises" in the sense that they expose students to a wide range of choices among words and sentence structures. They have been called forms of "syntactic calisthenics" in the sense that they give students daily exercise in increasing the strength and fluency of their syntactic manipulations. But *sentence-combining,* until recently, has not been viewed in the more general context of its being only one of several kinds of language experience.

In this broader view, *language-experience,* or sentence-combining, exercises, as they have been known, play a highly important role in the English curriculum. Instead of being defined as limited, a-rhetorical pedagogical tools as early defined by Mellon (1969), language-experience exercises today are being viewed as fundamental to the entire pre-writing, writing, and rewriting stages of writing, and as basic to the general development of reading, writing, listening, speaking and thinking activities of students. The pioneering results of Daiker, Kerek, and Morenberg (1978) are noteworthy in regards to language experience related to writing. This study supports the view that language experience is the threshold, the means of entering into and exiting out of our thoughts and experiences regardless of which segment of the writing process we might find ourselves most heavily involved in at a particular time. This study also suggests that general and specific types of language experience can and ought to be constructed to enhance writer fluency in pre-writing, writing and rewriting processes. In all of the exercises, in every segment of the writing process, writers will be expected to practice and do something with language, not just know about it.

Forms of language experience related to the pre-writing process might include, but are not limited to, practicing forms of *analogy* (the extended, the natural, the unnatural, the personal, and the fantasy); practicing *oppositioning* (making the familiar strange and the strange familiar); engaging in *brainstorming, free association* and *meditation;* and practicing *systematic analysis.*

Forms of language experience related to the writing process might include, but are not limited to, practicing *organization;* practicing elements of major *modes of discourse;* practicing *voice* and *audience* implications; practicing using *levels of usage;* practicing the development of a *personal style;* and practicing a wide range of *syntactic fluency materials.*

Forms of language experience related to the rewriting process might include, but are not limited to, applied practice in *grammar, capitalization, punctuation, spelling,* and *diction* — the major focus and domain of tradition-

al writing courses; *revising words, sentences* and *concepts; stating central ideas, achieving insights* and *increasing effectiveness of expression.* This area might also include practicing *connotative* and *denotative language,* practicing *coordination, subordination, parallel structure, variety* and *emphasis;* using the *ladder of abstraction;* and developing *subordinate* and *superordinate categories* for concepts.

These are some possibilities. Obviously all elements of the writing process can be approached under the umbrella of language experience. The list given here is simply illustrative.

The next job to do is this. After many types of language experience materials are available, we ought to engage in a full-scale "over exposure" of students to them. This suggestion assumes that the immersion of students in language experiences must be a complete, extended baptism, not a token sprinkling. Granted that Moffett (1968), Christensen (1968b) and Cazden (1972) have cautioned against too much sentence-combining practice because, it is suggested, ineffective, involved, bloated student sentences might result. How often have teachers of writing in the past been plagued by too much of a good thing? Too much fluency? Too many details? Too much maturity and conceptualization? Can language ever be over-experienced?

Profound, extended and extensive exposure to various forms of language experiences can bring about syntactic fluency that in Moffett's own words "must grow rank" (p. 172) before it can be pruned. What a desirable task it would be if future teachers of writing had to prune healthy, vigorous linguistic growth in student writing instead of trying to grow it. Moreover, through over-emphasis on language experiences in the curriculum, critical values and enduring effects of the treatment can be observed, measured, evaluated and modified as desirable.

Another area of work to do relates to English as a Second Language instruction. Conditioning of speaking and writing habits is acquired through exposure to natural language in native environments. Language materials and methods currently available in English as a Second Language programs could prove useful as models for developing syntactic fluency materials. A few methods that condition speaking and writing habits that could prove useful include, for example, cue cards with words printed on them with WHO or WHAT to evoke subjects and objects from students. The numbers 1 and 2 evoke singular and plural forms. Tense is manipulated by using the words YESTERDAY, TODAY, and TOMORROW (instead of PAST, PRESENT and FUTURE); negative structures by NO or NOT, etc. It is obvious that cue cards, pictures and other aids would enrich language experiences, exercises and activities, especially for young students.

Finally, attention needs to be directed at not only enhancing but also understanding student thought processes as they are impacted by language experiences. For whatever the reasons, current sentence-combining research shows emphatically that the cognitive performance of students is improved through practice in sentence-combining. Perhaps continued research into this area will produce great insights about the nature and importance of language aimed at writing improvement.

SENTENCE COMBINING IN A COMPREHENSIVE LANGUAGE FRAMEWORK

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This paper will attempt to view the technique of sentence combining from the general perspective of a comprehensive language program. Although the vast majority of published articles and books as well as unpublished speeches and studies treat sentence combining from the restricted viewpoint of syntactic density (and justifiably so), a few efforts have been made to place sentence combining into a larger curricular framework. In addition, sentence combining has implications in many of the other aspects of a language program than syntax. This paper does not, however, attempt to synthesize these previous studies nor does it attempt to explore all of these implications. Rather, it embodies some reflective remarks on aspects of sentence combining which have not yet been examined or at least have not been sufficiently examined, in my opinion. The intent of the paper is to attempt to integrate sentence combining into the full English program. Finally, there is no strong thesis in this paper. It vacillates back and forth between excited approval of some facets of sentence combining to serious questioning of others.

First I will attempt a quick historical view of sentence combining. Secondly, I will view sentence combining from the perspective of a comprehensive English program.

Sentence Combining in a Historical Perspective

It may be of some use to ask two questions in this regard. Are there historical analogues for the present phenomenon of sentence combining, and if there are, can we learn something by examining the possible cycles of their appearance and disappearance? The answer to both questions is, with reservations, "yes."

At first blush one might suggest that the sophistic rhetorical movement in antiquity, represented by such figures as Gorgias, Thrasymachus, Protagoras, Isocrates, Prodicus, and others, can be considered as embodying something similar to the emphasis on sentence structuring seen in our modern movement. Sophistic rhetoric has sometimes been equated, both in antiquity and in modern times, to a stylistic rhetoric (and achievement of stylistic maturity is an overriding concern of nearly everyone who concerns himself with sentence combining). Thus sentence combining might be called "The Third Sophistic." But despite the authority of people like Plato in antiquity and Corbett in modern times, (Corbett 1967: 537,544); the equation of stylistic to sophistic is not defensible. As Untersteiner and many others have shown, the rhetorical systems of Gorgias, of Isocrates, of Prodicus, of Protagoras — of most of the important sophists — is not as narrowly sentential and stylistic as they have often been represented (Untersteiner 1954, *passim;* on Gorgias, for example, see pp. 117-162).

Probably the more proper analogue in antiquity for an almost purely stylistic rhetoric — I am provisionally assuming here that sentence combining is a stylistic rhetoric, a position I shall later qualify — is a group of post-Aristoteli-

an rhetoricians writing between the third century B.C. and the first century A.D. In both collections of these works, the nine-volume edition of Walz (1836) and the three-volume edition of Spengel (1883/1966), the productions fall rather neatly into three quite distinct categories, each occupying about a third of the collections: full-blown rhetorics like those of Aristotle or the *Rhetorica ad Alexandrum* (treating invention, arrangement, and style), issues-rhetorics like the works of Hermogenes teaching students how to focus and narrow down a topic (treating only one aspect of invention), and stylistic rhetorics like those of people whose names are not common knowledge — rhetoricians like Tiberius, Herodianus, Tryphones, and Demetrius (Spengel III, 57-82, 83-104, 189-206, 257-328) — (treating only style). They have their Latin counterparts in Halm's edition of *Rhetores Latini Minores* (von Halm 1964).

But even here the analogue is only partially true. The stylistic rhetoricians of antiquity, whether Latin or Greek, included in their works a considerable concern for sentential structures, but they also emphasized in their notions of style the sound structures of the sentences and the figures of speech which were not sentential but merely verbal. This dual preoccupation is not discernible in modern sentence combining.

Nevertheless, abstracting from prose rhythms and other structures and from metaphorical ornamentation, it remains true that one of the major concerns of rhetoric in antiquity from Isocrates and Aristotle through Cicero and Quintilian was the preeminence of the periodic sentence, a long, sustained, and syntactically complex structure which represented the prose ideal of the rhetoricians of two cultures and which also represented a Renaissance ideal among rhetoricians, if not among scientists. Generically, this concept is not dissimilar to that of sentence combining, which also sees a mature prose as exemplified in a sentence of twenty-four words in length, characterized by syntactic embeddings.

It must be admitted that the stylistic emphasis in rhetorical studies in antiquity, which began with the sophists and continued all through the Hellenistic period, in both the Greek and Roman empires, was a hardy tradition. One might ask why it initially started. The answer is, I suggest, thought-provoking. Sustained and systematic Greek prose arose in the sixth century B.C. as a direct rebellion on the part of the historians and philosophers against the inability of poetry to record accurately the events and the concepts they desired to communicate (Pearson 1939). Later, in the fifth century, the sophists, often engaged in legal or political or ceremonial situations of persuasion which did not at all call for historic or philosophic objectivity, understandably rebelled against such a scientific concept of prose and invented rhetorical prose, a more emotional and subjective and ornamented kind of writing. The history of Greek writing thus includes three separate emphases: poetic, scientific, and rhetorical (Cassirer 1944: III ff).

Similar rebellions help to explain other prose revolutions. Aristotle, for example, wrote rhetorical and para-literary prose in his Platonic period, but rebelled and reverted in his middle and later periods to the simple and unpretentious philosophic writing which the sophists had repudiated (Jaeger 1948: 8, 311, 287, 316-18).

In the Middle Ages, the two most accessible and used rhetorics were

Cicero's *De Inventione* (a Hermogenes-type issue-rhetoric), and the *Rhetorica ad Herrennium*, a figurist rhetoric, emphasizing stylistic tropes, sentence structures, and sound structures. But most of the major theologians of the day revolted against such a prose. Aquinas, in the *Summa*, explicitly favors and practices a simpler and more dialectical style, and Scotus writes prose that reads like syllogisms carved out of a logic text.

In the Renaissance, a similar revolution can be seen. Rhetorical prose, represented by the Ciceronians, was not the proper kind of prose needed by the rising new science and journalism of the period, and consequently the Ciceronian elaborated sentence structures, sound structures, and figurist ornamentations were repudiated for the simpler prose advocated by the Royal Academy.

History, then, might seem to suggest that a syntactically complex prose has at some periods in western culture been allied with rhetorical and para-literary prose, and opposed to scientific, philosophic, and journalistic prose.

Sentence Combining from the Perspective of a Synchronic Model of the Field of English

As a synchronic model for the field of English, I would like to use the semiotic model which I have elaborated in *A Theory of Discourse* (1971, Chapter I), to which the reader is referred if interested in the rationale and derivation. According to this model, the study of any language must first take account of the inherent structure of the language code itself; this is called the syntactic study of a language. Secondly, a language study must consider the capabilities of the code to refer to reality and embody meanings; this is the semantic aspect of language. Finally, a full study of language must take into account the actual communicative uses to which senders and receivers put the meaningful code; this is called the pragmatic facet of language study.

Frequently, anthropologists and sociologists and literary critics and philosophers and many other students of language separate the actual discourse components of the pragmatic from the historical and cultural contexts in which discourse behaviors occur. These contexts in which discourse occurs are respectively called the situational and cultural contexts of language. Consequently, five major areas can be delineated in a comprehensive synchronic view of a language — grammar, semantics, discourse, situational context, and cultural context. These are represented in Figure 1, *A Model of the Field of English*.

The subdivisions of each of the first three of these areas are represented in Figure 1 (adapted from Kinneavy et al. 1976: 253). They can be derived by the same semiotic formula which established the initial three (syntactic components, semantic references, and pragmatic uses), but in each case operating in a different environment. The reader is referred to *A Theory of Discourse* (Chapter I) for the full derivation.

Figure 1
A MODEL OF THE FIELD OF ENGLISH — 13

LANGUAGE
- LINGUISTICS
  - GRAMMAR
    - Phonology-Graphology 2
    - Morphology 2
    - Syntax 94
  - SEMANTICS 2
    - Semantic Similarities
    - Semantic Differences
- DISCOURSE
  - ARTS
    - Speaking 13
    - Listening 1
    - 34 Writing-Development of Style 27
    - Reading 15
  - MEDIA
    - Individual
    - Small Group
    - Large Group
    - Mass
  - MODES 5
    - Narration
    - Description
    - Classification
    - Evaluation
  - AIMS
    - Reference
      - Information 2
      - Science 5
      - Exploration
    - Persuasion
    - Literature
    - Self-Expression

BEYOND LANGUAGE
- SITUATIONAL CONTEXT
- CULTURAL CONTEXT

In any case, a basic semiotic model of the field of English is obtained which can be used to establish points of reference. One of the basic limitations of this synchronic model, however, if used for educational or pedagogical purposes, is its ignoring of the psychological development of the student. In the model I usually differentiate, for example, the style of scientific prose from that of informative (e.g., journalistic) prose, from that of persuasive prose, from that

of literary prose, and from that of expressive prose (to take examples from the right end of the model); similarly I also distinguish narrative from descriptive from classificatory and from evaluative prose. While retaining these distinctions, it will be worthwhile, in this discussion to refer to a developmental notion of style to distinguish the kinds of styles represented by Hunt's studies: child, early teen, adolescent, and mature. This explains the notations about development of style alongside writing.

With this addendum, I can now explain the numbers in each section of Figure 1. They represent the combined total of items in two recent bibliographies on sentence combining and the present conference; the items are placed alongside the component of the field of discourse to which they relate. The two bibliographies are "Sentence Combining: A Selected Bibliography," distributed by Donald Daiker (see Daiker, Kerek, and Morenberg 1979b: 107-8) and Stotsky 1975.

In any case some conclusions can be drawn about the relationships of sentence combining to various aspects of a total language program, if these bibliographies and this conference are any indication of concern. It is clear that some areas draw considerable attention and others are almost totally neglected. Let me move slowly through the model and make some pertinent comments.

Sentence Combining and Grammar

Sentence combining and grammar obviously is the greatest area of interest, as would be expected. But it is noteworthy how many of the publications and papers stay with syntax as their only motif.

When an extension to another area of the model is made in these studies, writing and the development of style receive the heaviest attention. Some reasons for these foci seem obvious. Anyone who has read the scholarship in this area has to be aware of the sometimes spectacular results which have been achieved in these three areas. If maturity of style in writing is defined in terms of syntactic complexity, then sentence-combining techniques can yield statistical evidences of growth in writing maturity which no other competitive technique can come close to. Indeed, as most of us are only too aware, most studies in composition development end up with no significant growth at all recorded. And, of course, some of the sentence-combining studies, particularly the Daiker-Kerek-Morenberg investigation, did not limit their definitions of writing maturity to syntactic complexity, but used the traditional norms of English teachers: ideas, supporting details, organization, voice, sentence structure, and diction. In five of these six areas, the sentence combiners proved superior (1978: 252).

This particular conclusion was all the more surprising because Daiker, Morenberg, and Kerek did not attempt to concern themselves with ideas, supporting details, organization, voice, or diction. In my mind, the most astonishing finding to come out of the Miami study was the discovery that of all the nine variables considered in the grading of the themes, the score on sentence structure had the highest correlation with the score on the holistic rating. It may be useful to give a few details about this finding, since it has not been reported in either of the published studies of the Miami experiment. In this unpublished version, Morenberg et al. say,

> In order to discover the relative importance of the separate syntactic and analytic factors in relationship to the holistic rating, we performed a multiple regression on the pooled posttest data, with the holistic rating as the dependent variable and the three syntactic and six analytic factors as the independent variables. (Table 8). [Table 8 was here inserted.]
>
> The results of the multiple regression indicate that the single best predictor of the holistic score is the quality of a paper's sentence structure.

In fact, the correlation coefficient between the scores on sentence structure and the holistic scores was 64.6%. And all of the other eight factors accounted for only 6.7% additional correlation, with supporting details accounting for half of that. (For a different set of predictors, see Nold and Freedman 1977: 172.) What this means, in ordinary language, is that *knowing only the sentence* scores of the tests, a person could predict 42% of the final grades; whereas knowing the combined scores on supporting details, ideas, organization/coherence, voice, and diction, one could predict only 2.7% of the grades. Seemingly these latter factors do not count for much in the raters' minds.

As Max Morenberg remarked, after announcing these findings in Wyoming in the summer of 1977, it would seem that English teachers may think that they grade for ideas and logic and supporting details, but they really grade on stylistic criteria.

Ever since I first heard these findings, I have not ceased to be amazed by them. All of the explanations of them have been intriguingly impressive, some promising, some disquieting. They pose some interesting enigmas.

Do these findings mean, for example, that English teachers, since they pay so little attention to ideas, supporting details, and development of theses, are different from other teachers and non-academic raters, who might pay more attention to these criteria and less to stylistic norms? Are English teachers less capable of judging thought content and logical evidence than colleagues in other disciplines? Are English teachers competent to judge themes on other than stylistic criteria?

If exercises in sentence combining produce the type of composition which English teachers seem to consider successful, that is, one characterized by effective sentence structures, regardless of thought content, then maybe freshman composition produces only a stylistic veneer and Moffett's criticism of sentence combining may be shown to have some validity (1968: 170). Sentence combining may then be substituting only a cosmetic front and be neglecting the real job of teaching students how to do the thinking that will result in the kinds of sentences that are syntactically mature (p. 168).

There is, however, a recent doctoral dissertation done at the University of Texas which casts doubt on one facet of this first explanation, though it supports another facet. Lynn Phillips this past summer finished her dissertation which scoured the entire range of upper-division compositions (defined as outside class themes at least 300 words in length) required in departments of very different types (Phillips 1978: 162). She eventually ended up carefully

analyzing fifty-nine themes from twenty different departments (themes and departments being randomly chosen) and compared them to a larger number of freshman English themes, also randomly chosen from our undifferentiated hordes. By analyzing the discourse, semantic, and syntactic characteristics of the themes and comparing these characteristics to the grades assigned to the themes by the upper-division teachers and the freshman-English teachers, she could ascertain what were the *real* (not the alleged) criteria used in rating. She concluded that comprehensiveness of information coverage, logical support and development, and organization were the major criteria used by both the upper-division non-English *and* the freshman-English teachers, although the freshman-English teachers applied the same criteria much more leniently (Phillips, pp. 121-3, 125). This supports the traditional use of English teachers to grade themes in experiments and thus seems to refute one aspect of the first explanation offered above. But it also seems to refute the notion that English teachers emphasize more than others the stylistic aspects of a theme.

Another explanation of the neglect of the logical and ideational aspects of the theme by the graders might be the assumption that teaching sentence combining necessarily forces students to consider these larger discourse issues and that the resulting theme embodies an organic union of thought and style. Consequently, the style is a reliable indicator of the thought content. This is a structuralist position which has a certain plausibility (especially for structuralists). It will be examined when the relation of logic to sentence combining is investigated later in the paper.

The organic unity of thought and style assumed in this explanation may result, however, not from a structuralist extrapolation from sentence to discourse forms, but from another pedagogical technique not covered in the report on the Miami experiment. It may well be that, at least in the Miami experiment, the teachers covered rhetorical principles in class with the experimental group without adverting to them in the research design. I have seen four of Mr. Daiker's demonstrations of sentence combining as a technique. In the last presentation, given at the University of Texas at Austin on September 8 this year [1978], Mr. Daiker explained that much of the writing of the students was done as homework, that they brought it to him for ditto reproductions before a given class session, and that a good deal of the class session was devoted to an analysis, a comparison, and often an evaluation of several students' attempts to combine the same kernel sentences.

In each of the three presentations Mr. Daiker made evaluative judgments about the superiority of one version over others and gave such reasons as "putting the main idea at the end," "building up to a climax," "supports the thesis better," "the word choice is better," etc. Now these criteria are semantic and discourse criteria — not syntactic. And it may be that the most important part of the sentence combining lessons was not the sentence combining but the functional teaching of rhetorical principles connected with the sentence exercises. If this is so, the use of sentence combining as a full-fledged composition program may well depend on a rhetorical background which is not made explicit in books like those of Strong or Daiker-Kerek-Morenberg. If so, in the hands of teachers who do not possess these rhetorical principles, the results of the technique may well be limited to syntactic growth. Mr. Hunt feels that not anyone can teach composition, and I agree — I have seen too

many student teachers in high school and teaching assistants in college who do not have an implicit knowledge of these rhetorical principles.

One additional point which I would like to make about the sentence combining viewed simply as syntactic competence is one which has been made by others and so I shall not spend too much time on it. In real uses of language, that is, those separated from classroom practice for future use and scholarly analysis, no one indulges in grammar for its own sake; to do so would be pathological. The same thing can be said about semantic competence. Indeed, the same thing can be said about all the areas of the field of English even in the discourse field, except the aims of discourse. No one listens just to be a good listener, no one (in media, for instance) writes letters just to write letters. This is even true of the modes. No one classifies just to classify — to do so would be pathological, though possibly a higher level of pathology than being grammatical just for the sake of grammar. As philosophers of language have said, syntactics is ordered to semantics, semantics to pragmatics, and pragmatics to the actual situational context (Carnap 1942: 13).

The further removed the language component is from the situational context the more unreal the classroom situation is. There is, therefore, inherent in any focus on just syntax the risk of the lack of motivation. There are many studies (typified by the summary research of Strom (1960) and Braddock et al. 1963:37-38) showing the questionable utility of teaching mere grammar. Marzano (1976) and Ney have emphasized this danger with sentence combining. Daiker et al. (1978), however, report a student enthusiasm in their investigations. It may be that the enthusiasm which Daiker and his colleagues observed in their investigations came from the teacher and not from the materials themselves. Many of the studies do not report on this facet, however, at least in the abbreviated form in which I consulted them.

I believe, incidentally, because the Strong (1973), and even more the Miami materials (Daiker et al. 1979a), do move in the direction of partial discourse and occasionally of full discourse, that there is less danger with their materials than with the almost completely a-discourse materials of earlier work. In addition, the Miami material has a healthy dose of humor, and that may be its saving feature, as far as this objection is concerned. Humor, it might be added, is always a discourse feature.

Sentence Combining and Semantics

Only two studies in either the bibliography or the conference concern themselves with semantic issues, Pedersen's dissertation (1977) and Stugrin's talk on "Sentence Combining, Conceptual Sophistication, and Problems of Precision in Technical Exposition." This is somewhat anomalous, for, although there are people who claim that style is basically a syntactic matter, most people would concede that a very important aspect of style also consists in the semantic choices which are made by a given author, age group, or historical period.

Finally, a discussion of sentence combining should give some attention to the two other areas of grammar listed in Figure 1, graphology and morphology. Does sentence combining help, for instance, spelling, handwriting, punctuation, and inflectional endings? The only study in this area of which I

am aware is that of Maimon and Nodine (1978). Their results suggest that initially there may be an increase in errors in these areas, due to the grammatical complexities being attempted, but that eventually the errors should decrease. The mere practice in writing ought to improve these skills also. And, indeed, I have tried to show elsewhere that stylistic features can be found at all levels of the semiotic model outlined above (Kinneavy 1971:167-8, 362-3). Consequently, when sentence combiners talk about development of style, it is disturbing at the outset to see semantic issues almost totally ignored.

Pedersen's study (1977) does indicate evidence of semantic growth by two norms. But all studies showing increase in concreteness of content, or, supportive detail, or ideas, etc., can be viewed as indirectly relating to semantics. Translating these notions into precise semantic concepts has yet to be done.

Sentence Combining and the Arts of Discourse: Writing, Reading, Speaking, and Listening

It is obvious from Figure 1 that a good many of the sentence-combining researchers feel that they are saying something significant about the "art of writing" as such. Frankly, if one abstracts from the art of writing all grammatical features (such as handwriting, spelling, morphological endings, syntax choices of all sorts), if one further abstracts all semantic choices (such as all vocabulary, figure of speech, and metaphorical elements), if one further abstracts all features determined by the medium (such as a book, a telegram, a lecture, a radio speech), the mode (such as narrative versus descriptive choices, etc.), the aim (such as to inform or entertain or persuade), and the features determined by the historical and cultural contexts, then we are left with the residue of the bare act of writing. In a similar vein, Wimsatt, I believe, once defined style as a residual scum. About this bare residue of writing, as Zoellner (1969) reminds us, we know behaviorally very little.

Have studies in sentence combining taught us anything either stylistically or pedagogically about the act of writing?

I believe, whether you will agree with me or not, that they have given us strong evidence that confirms a maxim which many of us don't really believe in: we learn to write by writing. The one thing that nearly all of the sentence combining experiments have required of the experimental groups is a strong emphasis on the act of writing as such. In the O'Hare experiment (1973), while the control group studied literature, put on plays, read and analyzed essays, and wrote some themes — in a word did the usual things that a seventh grade class does — the experimental class daily engaged in the act of writing by combining sentences and combining sentences and combining sentences. The same parallel existed in the Miami experiment, this time with college freshmen. The control group read and analyzed essays, studied rhetorical principles, and wrote some themes, while the experimental group combined sentences and combined sentences and combined sentences and also wrote some themes. In other words the experimental group engaged in possibly two or three times the writing activity that the control group did. This is, in all of the studies which I have examined, an important unexamined variable, as far as I can ascertain.

Now, most of the research in sentence combining, with a few exceptions, registers improvement in general writing ability as one of the achievements of the experiment. And I believe that they are right to do so. But it might very

well be asked if the writing improvement may not simply come from a disciplined writing practice, rather than from sentence combining as such. The research designs of all of the studies which I have examined did not isolate this as a variable worth stratifying.

An unpublished monograph by Roland E. Sodowsky and Stephen P. Witte (1978:20), based on research carried on with 51 students at Oklahoma State University in the fall of 1976 and the spring of 1977, supports this. None of the students were given training in sentence combining; they all studied "first, the structure and development of essays; second, style and conventional usage; and third, collection and use of secondary material" (p. 4). Each student wrote a minimum of sixteen thousand words during the two-semester sequence. Their results parallel fairly closely the Miami syntactic gains in four of five of Hunt's indices: words/T-unit, words/clause, T-units/sentence, and words/sentences (p. 18, Table I). Only in clauses/T-units did the group fail to improve significantly. This experiment seems to suggest that frequent disciplined writing practice improves writing.

But we do know that frequent disciplined writing practice, based on sentence combining, does improve general writing ability. Other disciplined practices have yet to prove themselves in the objective way in which sentence combining has. What this conclusion does seem to suggest is that if too much of the composition class time is taken away from disciplined writing in favor of analysis of readings, study of rhetorical theory, etc., writing improvement may not result. We don't know what combinations of reading, theory, discussion of readings and writings, and actual writing will yield the best results. As in all of the areas of the field of English, much future research still remains to be done.

One other facet of the act of writing seems related to sentence combining, namely, paragraph development. I am unaware of anything in the scholarly literature which cites evidence to show that improving sentences also improves paragraphs, but the texts of Christensen (1968a), Strong (1973), Daiker et al. (1979), and Obenchain (1977) all presuppose this extension of syntactic into partial discourse.

Although sentence combining is more relevant to writing than to reading, it has some important connections with reading. Morenberg et al., Fisher, Stotsky, Combs, and Obenchain have all paid specific attention to reading in their studies. In addition, there are some other issues which must be raised.

Morenberg et al. (1978:252) and Fisher (1973) both state that there was no noticeable gain in reading skills resulting from the sentence-combining exercises. Combs (1975) reports that, although reading-rate measures and comprehension scores on the Gates-MacGinitie test were not significant, yet comprehension scores on a specially constructed reading measure were significantly better for the experimental sentence-combining group. Stotsky (1975) also reported many studies relating sentence combining to reading comprehension.

It would seem that sentence combining seems to have an indirect positive influence upon reading habits. The same argument used for writing in general, as opposed to sentence combining particularly, might hold true here. Since all sentence combining presupposes careful reading of the kernel sentences, it may be that this careful reading, not the consequent sentence combining,

causes the improvement in reading ability.

Two other additional concerns with reading skills seem also related to sentence combining. In the first place, it might be asked how most of us, who were never exposed to sentence combining, nonetheless manage appositives, relatives, and the like with an adequate dexterity. Probably we initially encountered such combinations in our readings and, without analytic explicitness, slowly transferred them to our writing patterns. If this is so, is the reason that we now have to make such transfers explicit and systematic owing to the fact that many present-day students do not have enough of the reading encounters to enable them to do it implicitly? This is at least a plausible hypothesis.

If this is so, then is sentence combining the substitution of a writing activity for a reading activity that was usually more extended in time? If nothing else is lost in the substitution, maybe sentence combining is an efficient substitution. But this is a big "if." Sentence combining, therefore, may be one pedagogical gambit of a near-illiterate society. And, in fact, it may abet such illiteracy. This is a sobering thought; what we are gaining on the straightaway we could be more than losing on the swing. It might be pointed out, however, that there are some indications which militate against this hypothesis. For one thing, the positive findings of Combs and of Obenchain would not support this hypothesis.

The second major issue involves the sometimes competing claims of syntactic maturity and readability. Anyone who has worked with readability formulas and knows anything about syntactic fluency is aware that there are overlapping concerns. McLaughlin's smog formula (1969), for example, is based on number of words per sentence and number of words containing three or more syllables. The readability people are generally concerned with lowering the number of words per sentence to a readable level, given the assumption that many of the sentences of modern prose are entirely too complex and too long. Yet increasing length and complexity of sentence structures is an avowed goal of many sentence combiners.

The problem came home to me in a dramatic manner at a symposium on technical writing we had at The University of Texas at Austin. One advocate of sentence combining made the suggestion that sentence combining could be of singular assistance in teaching technical writing (an assumption seemingly made by a paper at this conference also). John Walter, the co-author of the most widely used and widely respected text in technical writing, strongly disagreed. At nearly every firm for which he has served as a consultant in the last twenty years, said Walter, the problem was nearly always to teach writers at that level to simplify and shorten their sentences. In other words, syntactic complexity is not a norm which is indefinitely positive. At some point, syntactic maturity may move into syntactic senility.

What is this point? The length recommended for words per T-unit as a model to aspire to in the Hunt study (1965b) is the norm of the *Harper's* writers, 20.30. This is very close to the length recommended by Gebhard (1978:214), using models drawn from *The Atlantic, Harper's, Saturday Review, the Reporter,* and *The New Yorker* (20.75). Gebhard gives the translation of this into words per sentence, 24.02. In an analysis of word-per-sentence lengths of various genres, Marckworth and Bell (1967:371) start with a

genre they call "miscellaneous," which includes government documents; the mean sentence-length of this category was 25.49. The category with the next longest sentences was the genre they called "learned" prose, and the mean word-length of the sentences was 23.81 — already under the *Harper's* model. Marckworth's and Bell's category contain the following typical other types, with the respective word length per sentence indicated: press, reporting — 21.37; press, editorials — 20.36; skill and hobby writing — 19.87; fiction, general romance and love story, 13.72; fiction, mystery and detective, 12.76. The average mean length of the entire corpus, some 521,248 sentences, was 19.27 (p. 276).

According to other studies, the readability of learned prose (the second category above) is often in the third and fourth year of graduate studies. Are we sure that this is the type of prose we want our students to master? For example, in the Coleman study (1966), the average reading ability of the average white urban high-school graduate in Texas was at the eleventh-grade reading level (p. 274). It's probably lower now, judging by all the other declining criteria we have now. There could be a gap of four to five years between what students are expected to read and what they are being asked to write. Yet the kind of norm represented by the writing of *Harper's* is espoused as a model by Hunt, Gebhard, and many others in sentence-combining studies. There is, of course, in the McLaughlin smog formula a second variable, word length. And long sentences without a proportionate number of tri-syllabic words would not be as unreadable as the learned prose. But it is a good question if we really expect our students to use in their workaday prose the sentential style of *Harper's*. Actually, some other questions have to be answered before we reach such a decision. Maybe there is a balance between the syntactic complexity of the *Harper's* sentences and the semantic complexity of the *Harper's* vocabulary. And maybe by teaching freshmen to write sentences that are of eighteenth-grade syntactic complexity but of eleventh-grade semantic complexity we are asking them to produce stylistic monsters, from which they may never recover — especially if they don't read. This is just speculation. We need research in all of these areas. But the questions ought to be asked.

Studies relating sentence combining to speaking are surveyed by Stotsky (1975:47-8). Most of the studies compare oral to written syntactic fluency, but in the teaching of English as a native language there seem to be few evidences of interrelationships between the two insofar as the teaching of writing by sentence combining is concerned. The relative silence on this topic in modern treatments of stylistic maturity is matched only by the profuse attention given to the importance of listening to and speaking the sentence in antiquity — evidence, no doubt, of the oral basis of that culture and the visual basis of our own.

At the side of Figure 1 below the arts of discourse (speaking, listening, reading, and writing), there is a notation about development of style. This is to accommodate the bibliographical references to the notion of a concept of a growing development in a general stylistic ability. In my own model I do not make provision for such a notion, but instead I farm out style to the various arts, media, modes, and aims which are involved in any given case. There undoubtedly is a writing style which is distinct from a speaking style. Now in the establishment of such a notion (which should be abstracted from stylistic dif-

ferences deriving from medium, mode, and aim), I believe that sentence-combining studies have helped considerably to establish some of the ingredients. And this is certainly one of the major contributions of sentence combining. However, a writing style (as distinct from a speaking style, or a reading style, or even a listening style) is not simply equivalent to a *Harper's* style, as I shall attempt to show momentarily.

Sentence Combining and Media, Modes and Aims of Discourse

The next column in Figure 1 is the column devoted to media. By media here I mean all channels used to transmit writing or speaking (or Braille, etc.). Media, in this schema, correspond fairly closely to what Moffett calls "orders of discourse." They include such written channels as personal letters, memos, dictaphones, group memos, group letters, manifestoes, books, journals, bumper stickers, contracts, ads, sky writing, news stories, magazine articles, tombstones, etc. — and one non-medium, the classroom theme. The studies in sentence combining focus almost exclusively on two of these, the classroom theme and the magazine article from a periodical like *Harper's*. This is a very restricted sampling from the range of writing media that students are likely to engage in — in fact, most are not likely ever to engage in either after school.

But the problem of which medium to teach is similar to the problem of which mode and which aim to teach. Let us consider these together, initially at least. I personally believe that it is in this area that some of the most fruitful work in sentence combining yet remains to be done. Relating sentence combining more closely with different media, different modes, and different aims could solve four major problems: 1) it could remove the very grave danger of lack of motivation involved in teaching isolated syntactic skills; 2) it could avoid the danger of lack of transfer of mechanical skills to discourse situations, a danger pointed out by nearly all studies of isolated grammatical skills; 3) it could get away from the monolithic notion that all styles should approximate something like *Harper's* and recognize different syntactic problems for different kinds of writing assignments; 4) and finally, it could provide a *partial* rationale for the choices made by the writer among the various options open to him.

The necessity of such distinctions was first called attention to by Seegars in his 1933 study, "Form of Discourse and Sentence Structure." He pointed out that "under argumentation one can see a marked tendency toward increased use of substantive clauses in indirect discourse, of clauses of condition, and of clauses of cause. Under exposition there is a slightly noticeable tendency toward increased use of adjective clauses." Narration and description did not seem to "multiply the uses of any one type of clause" (p. 54). Finally he pointed out that dependent clauses occurred less frequently in narration and description.

Green's 1972 study found a significant difference in the number of words per T-unit produced by the experimental group in narration, but not in description or in the mixed mode. Combs (1975) differentiated the four traditional modes in his study, but did not indicate in his abstract if there were significant modal differences in the results. But Perron's 1977 study, "Written Syntactic Complexity and The Modes of Discourse," is the most thorough investigation of the problem to date. After surveying the work of Seegars (1933) and several others, he collected writings in the four traditional modes from

153 third, fourth, and fifth graders and analyzed them for T-unit maturity. He found that at each of the three grade-levels the modal rankings in a descending order of sophistication were invariably: argumentation, exposition, narration, description (p. 11). More important, he also illustrated that the difference between the maturity level of argumentation when compared to description was often much greater than that between a third grader and a student in the last years of high school, if abstraction is made of the mode. He says, "Apparently, when it comes to syntax and writing fluency, the range of powers already controlled by writers at the fourth-grade level, for instance, is almost as broad as their potential for development throughout their remaining elementary and secondary-school years" (p. 12).

Findings like these parallel those made by readability studies which show quite different syntactic and semantic ranges in different kinds of writing. They also parallel studies like that of Marckworth and Bell mentioned above which concerned itself with varied sentence lengths found in their fifteen "genres." For example, the last five categories with smallest sentence lengths are all narrative, and they average 13.47 words in length. This, however, contrasts with the narrative news story, which averages 21.37 words in length (Marckworth and Bell 1967:376). In other words, narratives with different purposes seem significantly different. Indeed, Marckworth and Bell's distinctions have as much to do with aim as with mode. And, indeed, they may have something to do with medium also.

The distinction by purpose or aim, rather than by mode, is adopted by a good number of studies, many more done in England and on the continent, but a few done in America also. The distinction between aim and mode is not present in the traditional forms of discourse and is a serious defect in the traditional categories (see Kinneavy 1971:35-7, and Kinneavy et al. 1976, Chapter I.).

McConochie (1969), interested in the skills necessary to teach foreign language students in civil and electrical engineering, "the most popular fields of study for foreign students in the past decade" (p. 379A), analyzed 2000 sentences from 100 engineering texts and contrasted this sample to 919 sentences drawn from literary prose. She concluded that

> . . . engineering writing uses a smaller subset of the total inventory of grammatical constructions in English than does literary writing.
>
> . . . . . .
>
> Engineering writing is a simpler version of English than literary writing. The latter, although also a subset, is better defined by its diversity than by characteristics shared with engineering writing.
>
> . . . . . .
>
> Since engineering writing is less complex than literary writing, it is probably easier to learn. Much of its simplicity lies in the use of a few sentence-level patterns (p. 379A).

Simpson's (1965) contrast of scientific writing with general nonfiction comes to quite similar conclusions. Basic sentence structure, high use of nominals and passives, massing of modifiers, and other characteristics differentiate

scientific from general nonfiction writing (p. 468A).

Linguists and rhetoricians in England, particularly, concerned with the education of non-native students in the fields of technical writing, advertising, and business writing, have analyzed largd corpora of writings in these areas and find significant syntactic (and other) differences among them (Huddleston 1971; Leech 1966; Bareš 1972).

The findings of all of these scholars now provide us with a much better basis for choosing the syntactic options we teach in sentence combining. I once asked one of our noted sentence-combining theorists why he chose the combinations he did rather than others, and he answered that there was no scientific criterion — those chosen seem more usual and traditional. But some of them are not that common in some kinds of discourse and others which are common in technical writing, for example, are not found in any sentence-combining book I have consulted. Huddleston finds a high proportion of disjunctive and non-disjunctive interrogatives in scientific prose (p. 41). "Whether the animal or man responds by moving or speaking is, however, very seldom determined by the actions of a single receptor fibre" is given as an example of a disjunctive alternative (p. 20). "The question then arises as to which part of the plant must be attached for meiosis to occur in the spore matter cells" is given as an example of a non-disjunctive interrogative (p. 21). Together these make up 124 out of the 178 embedded interrogatives in the corpus (p. 41). Yet interrogative embeddings are not usually considered in sentence-combining books.

At this conference there are several papers devoted to the logic of sentence combining. I have made some preliminary (and unsuccessful) forays in this area, attempting, for example, to classify the kinds of syntactic patterns used by Daiker et al. and by Adelstein and Pival in their text *The Writing Commitment* (1976) into a pattern suggested by, for example, the sixteen basic ways of joining propositions and classes in symbolic logic, in order to relate them to particular modes and aims of discourse. But the dynamic and subtle connections of real language refuse to be reduced to the static classifications of mathematical logic, refuse even to suggest large classifications.

Simple narrative statements like "The automobile broke down" or "She cried because her friend had to leave" cannot easily be reduced to the crude types of truth relationships examined by logicians.

To date the most systematic attempt to link sentence combining to various types of idea relationships has been that of Obenchain. In addition, she carefully coordinates these exercises with punctuation work. She studies the kinds of combinations needed for simultaneous and for non-simultaneous time relationships, for specific versus general statements, for cause and effect relationships, etc.

Regardless of whether they resist classification or not, it is fairly clear that even simple syntactic maneuvers have large logical, even cultural implications. In other words, when teachers ask students to combine sentences using even simple subordinators, for example, the student is often forced to do some serious thinking. Paula Johnson, formerly of Yale and now of NYU, asked the audience at a talk at the University of Wyoming this past summer to combine the two following ideas from *Crime & Punishment:* "Sonja was a saint"; "Sonja was a whore." One extreme position is to state that, "Either Sonja was

a saint or Sonja was a whore, but not both at the same time." This posits an ethical system in which the statements are mutually exclusive. "Although Sonja was a whore, she was also a saint" concedes that sainthood and prostitution do not ordinarily coexist but admits that they do in this instance. "Because Sonja was a whore she was a saint" makes a totally different value judgment from the preceding combination — it posits a necessary causal connection between the two conditions. "Only when Sonja was a whore was she a saint" repudiates even further the concessive condition of "although" and is farthest removed from the original posture. Each combination calls for a look at two ethical systems and asks for a consideration of their compatibility. Syntactic commitments in this case involve situational and cultural contexts, values, and conventions.

Sentence Combining and Situational and Cultural Contexts

The example about Sonja obviously carries the issue of sentence combining into cultural and situational contexts. And that is where any real language issues should culminate. After all, we only use even purposes and aims in language to achieve something in our historical condition.

Several recent emphases in anthropology, classical rhetoric, theology, and hermeneutic philosophical studies have converged to underline the importance of the context of situation, the immediate circumstances of place, time, personal motivations, etc., in making judgments about language (Kinneavy 1978).

Some speech-act theorists, a group of linguistic philosophers, mostly British, have reached the same conclusion. Starting out attempting to explain such simple assertions as "I promise I'll pay you the money back," Searle, Grice, Ruhl, and Pratt have often found that they necessarily have to go to the context of situation and often an entire cultural set of values to try to explain seemingly elementary assertions. Ruhl, to explain why we say "because," offers the following interpretation, which is sometimes called (you guessed it) "Ruhl's rule."

> If a structure A-and-B can be analyzed as a temporal sequence, it will be. If it can be further analyzed that A is a precondition for B, it will be. And if A can be analyzed as a decisive condition — that is, a cause — of B, it will be. Only if the first stage, — the temporal sequence — is not reached, will the coordinate structure be analyzed as symmetric (quoted in Pratt 1977:156).

In terms of Forster's old example, if the king dies and the queen dies, the reader wants to know if there is a temporal sequence. If the king's death occurred before the queen's and was a precondition for the queen's death, the reader wants to know that also. Finally, if the queen dies as a result of the king's dying, the reader wants to know that "The queen died *because* the king died." Ruhl is here applying a more general principle accepted by many speech-act theorists, Grice's Cooperative Principle, which states that in a given situation, the writer should give as much information as is required, the information should have evidence, the information should be relevant to the writer's and reader's situation, and that the manner of telling the information

should be perspicuous.

I believe that this cooperative principle between writer and reader may supply the motivation we talked about earlier. Given two kernel statements ("Sonja was a saint"; "Sonja was a whore"), the reader wants to know if there was a temporal sequence, if one was a precondition to the other, and if one was a cause for the other. The statement "When Sonja was a whore, then only was she a saint," satisfies all of the conditions of Ruhl's rule and all of the parameters of Grice's principle: quantity (as much information as is required), quality (true evidence), relation (relevance to reader — this would become true only in reading the novel), and manner (it is a perspicuous statement).

The Cooperative Principle has to be modified for different cultures, for different situations, for different purposes of language, for different modes, for different media, for different arts, and for different semantic and syntactic potentials of language. But in such a basic socio-philosophical principle can we find the intelligent reason for combining two primitive sentences. Someone is going to work out these modifications and translate them into language which freshmen and secondary students can understand and give a philosophic rationale to sentence combining.

PART II RESEARCH IN SENTENCE COMBINING

PARALLEL SENTENCE-COMBINING STUDIES IN GRADES NINE AND ELEVEN

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Kellogg Hunt in 1965 concluded his study *Grammatical Structures Written at Three Grade Levels* with this statement:

> This study suggests a kind of sentence-combining program that has never been produced, or at least not systematically and fully. The aim should be to widen the student's span of grammatical attention and concern. The method would be for him to reduce independent clauses to subordinate clauses and nonclauses, consolidating them with adjoining clauses and T-units. He could work up to structures of considerable depth and complexity comparable to those exhibited by twelfth-graders and superior adults.

John Mellon (1969) and Frank O'Hare (1973) followed with their studies using sentence-building programs and they had considerable success with seventh-grade students. Other studies followed.

Francis Christensen (1967) demonstrated the use of free modification by skilled adult writers. This led a number of researchers to study the effects of instruction in free modification.

Impressed by the findings of these investigators, Callaghan (1977) and Sullivan (1977) designed parallel studies which would extend several important lines of research and would also combine other areas of research previously separated. Many of the earlier studies involved students in elementary grades. Some of the sentence-combining studies focused on embedding and substitution problems. Others focused on free-modification problems. Some of these studies included evaluation of the overall quality of writing and some included oral practice. Only one included an attitude survey.

The researchers attempted to incorporate all the best features of these studies and to extend them to involve large numbers of students in Grade Nine (Callaghan 1977) and Grade Eleven (Sullivan 1977). The purposes and design for the two studies were the same. The same sentence-combining program, the same pretest and posttest measures including the writing samples, the reading measures, and the attitude questionnaire were used in both studies.

Purposes and Procedures

These were the purposes of the studies:

> To measure the effect of sentence-combining practice on the growth of syntactic maturity in students' writing in Grades Nine and Eleven.
>
> To discover how much sentence-combining practice is necessary to achieve significant growth in syntactic maturity.
>
> To measure the effect of sentence-combining practice

combined with oral practice on the growth of syntactic maturity.

To measure any significant differences in the growth of syntactic maturity among students of initially low, average, or high syntactic fluency.

To measure any changes in students' attitudes toward sentence-combining exercises, writing in general, and writing good sentences at the end of the experimental treatment.

To measure the effect of sentence-combining practice on the overall quality of student writing.

To measure the effect of sentence-combining practice on reading ability.

To determine whether any growth in syntactic maturity measured at the end of the treatment in June can still be observed three months later in September.

To determine if any developmental trends can be discovered from a case study of a student at each grade level.

A group of elementary and secondary teachers under the direction of Charles R. Cooper of the Faculty of Educational Studies at the State University of New York at Buffalo developed a series of workbooks for a sentence-combining program to be used from Grade Five through Grade Twelve. This series incorporated both Hunt's sentence rhetoric of embedding and substitution and Christensen's rhetoric of addition, as well as reconstituted paragraphs. One of the high-school workbooks was selected, adapted for the studies, and entitled *Getting It Together*.

Each teacher was given a teacher's manual and a classroom set of sentence-combining exercise workbooks. The manual of seventy pages written by Cooper gives very complete directions to teachers about how to direct students in using the problems. It describes how the sentence-combining practice in the workbook fits in a full written syntactic-maturity teaching program and how this program fits in the context of a comprehensive writing program.

The workbook consists of thirty sentence-combining lessons and has seventy-nine pages. There are 279 problems in the book, presented in sets of six to twenty, developing an idea or topic with content from popular culture, subject-matter texts, and personal experiences, all topics geared to high-school students. The sentence-combining practice in the workbook is not dependent on grammatical or syntactic terminology. Each problem consists of a matrix sentence and one or more insert sentences to be combined with it.

The problems, simple at first, become progressively more complex. At first the student practices embedding adjectives, then phrases, then clauses. Later the student practices using sentence openers, noun substitutions and absolute and participial phrases. In the later lessons the student combines all these structures into a single sentence.

In the format of the workbook, the insert sentences are indented above or beneath the matrix sentence in each problem. Certain cue words are enclosed in parentheses after the insert sentences to aid the student in embedding or adding words to the matrix sentence.

The following are examples of problems from the workbook:

Word-embedding problem (p. 2)

A. The zebra ate the grass.
   The zebra is striped.
   The grass is green.

B. The striped zebra ate the green grass.

Noun-substitution problem (p. 27)

A. SOMETHING disturbed my father.
   I came home one hour after my curfew.
   (the fact that)

B. The fact that I came home one hour after my curfew disturbed my father.

Absolute-phrase addition problem (p. 38)

A. The motocross racer walked to the winner's stand.
   His face was covered with mud. (ADD)
   His uniform was hidden by dirt and grime. (ADD)
   His helmet was held under one arm. (ADD)

B. The motocross racer walked to the winner's stand, his face covered with mud, his uniform hidden by dirt and grime, his helmet held under one arm.

Complex sentence-combining problem without cue words (p. 76)

A. The trumpeter played a note.
   The trumpeter rose for his solo.
      He rose from the midst of the orchestra.
   The note was single.
   The note was sad.
   The note floated over the audience.
   The note filled the hall with beauty.
      The hall is for concerts.
      The beauty is melancholy.
   The note conjured up images of landscapes.
      The images are in the minds of the listeners.
      The landscapes are pastoral.

B. The trumpeter, rising from the midst of the orchestra for his solo, played a single, sad note which floated over the audience, filling the concert hall with melancholy beauty and conjuring up in the minds of the listeners images of pastoral landscapes.

In addition to the twenty lessons in the workbook there are ten reconstituted paragraphs patterned after the kind of exercise suggested by Ney (1966). The paragraph consists of short kernel sentences. The student is directed to "reconstitute" the paragraph by combining these short sentences into longer, more complex sentences by embedding and adding. The object of the exercise is to rewrite the paragraph in the most effective way. This kind of exercise gives the students a chance to decide which syntactic options are most appropriate to the whole piece.

Here is an example of a reconstituted paragraph (p. 42).

Caricature

Caricature is a type of portrait. It makes a person ludicrous. It does so by exaggerating. It does so by distorting. The features are prominent. The distorting is without losing the likeness. The term caricature is commonly applied. It is applied to drawings. It is applied to paintings. Some literature contains caricatures. They are drawn with words. The words are to convey exaggeration. The exaggeration is similar to the kind found in sketches.

After rewrites of the sentence-combining problems or the reconstituted paragraphs the teachers would have the students compare answers either in class groups or small groups. Sometimes the rewrites were put on the board or on transparencies for overhead projection on a screen, and discussions would follow. In addition to focusing on syntactic structures, students might discuss vocabulary, punctuation, and other related matters.

Nine teachers participated in the Grade Nine study and seven teachers in the Grade Eleven study. Each of the teachers randomly assigned four English classes to one of three treatment groups or to the control group. The control group would do all the work of the curriculum except sentence-combining exercises.

Treatment 1 group (100% group) did all thirty lessons and ten reconstituted paragraphs over the course of the year. Treatment 2 (50% group) did fifteen lessons, every other lesson in the workbook starting with Lesson 1 and every other reconstituted paragraph starting with the first. Treatment 3 (50% + oral group) did the same lessons and reconstituted paragraphs as Treatment 2 with the addition of choral recitation before and after they rewrote the sentence combinations. The three groups had their lessons spread out over the course of the year.

Pretest and Posttest Measures

At the beginning of the year the participating teachers administered to each of their four English classes the Diagnostic Reading Tests Survey Section: Upper Level (From Grade 7 through College Freshman Year) Form D, and at the end of the year Form F.

At the time the diagnostic reading test was administered each student was asked to complete an attitude questionnaire of eighteen items. On the questionnaire the student was directed to read each statement and to indicate whether he strongly disagreed, disagreed, agreed, or strongly agreed with the statement. There were nine pairs of topic statements, one of each pair a positive statement, the other a negative statement. For example, on the topic of practicing writing sentences #5 pairs with #9:

5. Practicing writing sentences could help me improve my writing.
9. Exercises that might help me write better sentences would turn me off.

Other pairs of statements dealt with attitudes toward English as a school subject, the value of English skills, writing as a means of understanding one-

self, writing as a means of personal satisfaction, revising writing, and improving sentence structure. The statements were randomly arranged but, in fact, the student was reflecting his attitudes by both a negative statement and a positive statement. At the end of the year, the students responded to the same attitude questionnaire.

Before the sentence-combining instruction was to begin, teachers were asked to provide time in their schedules to have the students write for an entire period on four topics. Each topic was in a different mode: exposition, narration, description, and persuasion. The students were informed that these papers would not be graded but that they would be kept on file and compared with their writing at the end of the year to evaluate their progress. The students were unaware of the fact that they were participating in a research study.

After the lessons were completed, the participating teachers were asked to schedule a period a week for the students to write again in the four modes.

This was the pretest narrative topic:

> You have been in many classes during your school career. Occasionally something different or memorable happened. Select a particular day and describe what happened. Fill in the details and tell the full story so that a friend of yours who was not there will have a clear idea of what happened.

This was the posttest narrative topic:

> We have all had embarrassing things happen to us. Describe one embarrassing incident that occurred in your life. Give all the details and discuss the effect it had on you.

Overall Writing Quality

In both studies a random sample of twenty-five posttest writing samples on the expository topic from the Treatment 2 (50% group) was selected, because this group had made substantial gains in terms of mean T-unit length, noun substitutions per 100 T-units, and final free modifiers per 100 T-units. These papers were compared to a random sample of the control group's posttest writing samples.

Case Study

A case study of one student in the Grade Nine study and one student in the Grade Eleven study was made for the purpose of discerning developmental trends in syntactic maturity.

Delayed Posttest

When the mean T-unit length and the noun substitutions per 100 T-units and the final free modifiers per 100 T-units had been computed, the names of students in each of the three treatment groups who had made gains of at least two words per T-unit were listed. Their teachers were contacted at the beginning of the next school year and asked to request of these students that they complete two more writing samples on an expository topic and on a combination narrative-descriptive topic patterned after the pretest and posttest samples.

This was the delayed posttest narrative-descriptive topic:

All of us have memories of a special place where we have had a great time! Describe the place to a friend who has never been there and tell him about an experience that you had there. Give your friend details that will help paint a mental picture: sounds, colors, smells, shapes, and your feelings about the place. In addition to the description, give a detailed account of the experience that you had there.

Data Analysis

Mean T-unit length, noun substitutions per 100 T-units and final free modifiers per 100 T-units were computed for pretest and posttest writing samples. Manova analysis was used for these measures and for the attitude questionnaire. Polynomial regression of each posttest on the pretest score was used to determine if there was a difference in the rate of syntactic growth among students of initially low, medium, or high levels of syntactic ability.

The first forty-five T-units from all samples were segmented, eleven T-units from each of the first three samples and twelve T-units from the fourth sample. The rules used by O'Hare (1973) for segmentation of T-units were adopted. If one of the student's samples did not have the required number of T-units, an additional one was counted on the next sample.

Noun substitutions include fact clauses, question clauses, gerund phrases and infinitive phrases. Noun substitutions in subject position in the first forty-five T-units were counted. This number was divided by the total number of T-units (usually forty-five) and then multiplied by 100, providing an index of noun substitutions in subject position per 100 T-units, another index of syntactic maturity according to Hunt. This measurement was not used in the Grade Nine Test because there were so few instances of it in the samples.

Final free modifiers are defined by Christensen (1967) as modifiers not of words but of constructions, from which they are set off by junctures or punctuation. These loose non-restrictive structures include prepositional phrases, relative and subordinate clauses, noun-, verb-, adjective-, and adverbial phrases or clusters, and absolutes. If they occurred at the end of T-units, they were counted. When a sentence fragment was clearly a loose additive modifier of the sentence just before it — and where the fragment and the sentence were in the same T-unit — the fragment was treated as a final free modifier, even though it was not, strictly speaking, properly punctuated. This sort of fragment is what Mellon (1969) calls the "orthographic fragment" (p. 43). The total number of final free modifiers was divided by the total number of T-units (usually forty-five) and then multiplied by 100, providing an index of final free modifiers, a crucial index of syntactic maturity according to Christensen.

Results in Grade Nine

This study involved nine teachers from seven schools who volunteered to participate in the study. Two of the schools represented were suburban junior high schools; three were urban four-year high schools; two were private denominational high schools. Thirty-six English Nine classes, four classes of each teacher, made up the experimental population. From the 706 students in the nine teachers classes, there were 380 sets of completed data. A random sample of 196 sets was used for the data analysis.

Assessment of Syntactic Maturity and Reading Effect

Group mean scores for pretest and posttest measures are listed in Table 1.

Table 1
Grade Nine Mean Scores on Pre-Post Measures

Method	TULPRE	FFMPRE	RDGPRE	TULPST		RDGPST
100%	12.6	2.9	49.2	13.8	6.7	56.5
50%	11.8	2.1	46.5	13.8	5.5	54.0
50% +	12.9	2.4	50.6	14.1	5.6	57.4
Control	12.2	2.0	51.2	12.9	2.8	57.3

The 100% group's mean T-unit length gain was 1.2 words per T-unit. The 50% group's was 2.0, the 50% + oral group's is 1.2, and the control group's gain was .7.

The 100% group made gains of 3.8 in the frequency of the use of final free modifiers per 100 T-units, the 50% group made gains of 3.4, the 50% + oral group 3.2, and the control group .8.

In reading comprehension the 100% group's mean raw-score gain was 7.3, the 50% group's 7.5, the 50% + oral group's 6.8, and the control group 6.1.

The results of the one-way manova, with covariates (pretests) eliminated, indicated that the growth in the two syntactic factors, mean T-unit length, and frequency of the use of final free modifiers were significant at the .01 level and the .0001 level, but the gain in reading was not significantly different from that of the control group.

Students who did fifteen lessons made as great gains in syntactic maturity as those who did thirty lessons. The effect of oral practice with the sentence-combining exercises was not significant.

Polynomial regression techniques indicated no differences in rate of growth in syntactic maturity for students of initially different levels of syntactic maturity.

The Attitude Questionnaire

There were significant positive attitude changes on the part of the students toward sentence-combining practice and toward revision of compositions between pretest and posttest, and between treatment and control groups.

On item 5, dealing with the usefulness of sentence-combining practice, 84% of the treatment groups agreed compared to 69% of the control group ($p = .04$). On the negative form of this item, item 9, 65% of the treatment groups disagreed as compared to 47% of the control group ($p = .04$). The pretest-posttest change in positive student attitude toward item 5 went from 70% to 80% ($p = .004$). This is clear evidence of a very positive attitude toward the sentence-combining exercises.

Overall Writing Quality

A random sample of twenty-five treatment-group 2 (50% group) posttest writing samples on the expository theme were compared to a random sample of twenty-five posttest writing samples of the control group on the same topic.

The raters, twenty students in a graduate seminar on measurement and evaluation in English Education, used an analytical scale on five criteria developed by Diederich and adapted by Callaghan. The criteria were rated on a de-

scending scale of 5, 4, 3, 2, or 1. The total possible score of four ratings was 100. There was no significant difference found between the treatment group's writing samples and the control group's writing samples.

Case Study

The student chosen for the case study was selected from the 100% treatment group because he was particularly intelligent, and conscientious about improving his writing. He had high pre-post reading scores — 80 and 86 — and high pre-post mean T-unit length scores — 14.7 and 18.5. He did not use final free modifiers in the pretest writing samples but he used sixteen final free modifiers in the posttest writing samples.

In addition to mean T-unit length and final free modifiers, mean clause length was determined, and the frequency of adjective clauses per 100 T-units were computed. This student used only one noun substitution in all fifteen of the papers, and so this measure was not included.

Gradual growth in all of the measures analyzed became apparent three months after the sentence-combining instruction had begun, and continued to the end of the year.

Delayed Posttest

Three months after the sentence-combining instruction had been terminated, students from the 50% treatment group who had made gains in both syntactic factors were asked to do two more writing samples, one on an expository topic and one on a combination descriptive-narrative topic.

Eight sets of papers were submitted by the students. These were analyzed as were the pretest and posttest writing samples for mean T-unit length and for final free modifiers and compared to the pretest and posttest scores of these students.

There was erosion on mean T-unit length of .8 in the post-delayed test and an increase in the frequency of the use of final free modifiers but the difference was not significant. While this is a limited sample, it does indicate that gains in syntactic maturity may erode if not reinforced.

The findings of this study clearly indicate that the sentence-combining exercises greatly enhanced the development of syntactic maturity in Grade Nine students. This is especially evident in the use of the final free modification, a characteristic of adult professional writing.

The non-significance of gains in reading and in lack of significant differences between treatment and control groups in the overall quality of writing indicate that the most one can claim for the effects of sentence-combining practice is that it has great influence on one aspect of writing — syntactic fluency.

Finally, the positive changes in student attitudes toward the revision of compositions and the sentence-combining exercises themselves show that sentence-combining can be a productive addition to the English curriculum.

Results in Grade Eleven Compared to Results in Grade Nine

The Grade Eleven study included four intact classes of seven English teachers who volunteered to participate in the study and who were from four different high schools: one urban and three suburban high schools. Twenty-eight English Eleven classes made up the experimental population. From the 702

students in these twenty-eight classes, there were 519 sets of completed data. A random sample of 174 sets was used for the data analysis of the study.

Assessment of Syntactic Maturity and Reading Effect

Group mean scores for pretest and posttest measures are listed in Table 2.

Table 2
Grade Eleven Mean Scores on Pre-Post Measures

	Pretest				Posttest			
Method	TUL	FFM	NSB	RDG	TUL	FFM	NSB	RDG
100%	12.9	12.3	.70	63.6	13.5	14.8	1.7	67.4
50%	13.5	14.0	.56	59.0	14.1	21.8	1.0	62.2
50% +	13.0	16.4	.83	61.3	13.9	18.9	.63	65.8
Control	12.6	12.0	.48	59.0	12.6	16.2	.50	64.0

The 100% group's mean T-unit length and the 50% group's gain were both .6 words per T-unit, the 50% + oral group's gain was .9 words per T-unit, and the control group showed no gain.

The 100% group's gain and the 50% + oral group's gain frequency of the use of final free modifiers per 100 T-units was 2.5, the 50% group's gain was 7.8, and the control group's gain was 4.2.

The 100% group made the largest gain of 1 noun substitution in subject position per 100 T-units, followed by the 50% group's gain of .4. The 50% + oral group made no gain, and the control group made a gain of .02.

The 100% group's mean raw score gain was 3.8, the 50% group's gain was 3.2, the 50% + oral group's gain was 4.5, and the control group's gain was 5.

The overall gains in the three syntactic factors made by the treatment groups are considerably higher than the overall gains made by the control group.

The treatments groups' gains in reading comprehension were not significant, which clearly indicates that sentence-combining instruction, while effecting growth in syntactic maturity to a significant degree, did not effect growth in reading comprehension.

On the one-way manova, with covariates (pretests) eliminated, the probability levels of the univariate F-ratios were significant for mean T-unit length and for noun substitutions, both at the .03 level. This indicates that the sentence-combining exercises did strongly influence growth in those two factors of syntactic maturity. The probability levels of the univariate F-ratios for final free modifiers and for reading were not significant.

In Table 3 the Grade Nine group mean scores and gains on pre-post measures are compared with the Grade Eleven group mean scores and gains.

Table 3
Comparison of Group Mean Scores and Gains
on Pre-Post Measures for Grades Nine and Eleven

	Grade Nine	Mean T-unit Length		Grade Eleven		
Method	Pre	Post	Gain	Pre	Post	Gain
100%	12.6	13.8	1.2	12.9	13.5	.6
50%	11.8	13.8	2.0	13.5	14.1	.6
50% +	12.9	14.1	1.2	13.0	13.9	.9
Control	12.2	12.9	.7	12.6	12.6	.0

	Grade Nine	Final Free Modifiers		Grade Eleven		
Method	Pre	Post	Gain	Pre	Post	Gain
100%	2.9	6.7	3.8	12.3	14.8	2.5
50%	2.1	5.5	3.4	14.0	21.8	7.8
50% +	2.4	5.6	3.2	16.0	18.9	2.9
Control	2.0	2.8	.8	12.0	16.2	4.2

	Grade Nine	Reading		Grade Eleven		
Method	Pre	Post	Gain	Pre	Post	Gain
100%	49.2	56.2	7.3	63.6	67.4	3.8
50%	46.5	54.0	7.5	59.0	62.2	3.2
50% +	50.6	57.4	6.8	61.3	65.8	4.5
Control	51.2	57.3	6.1	59.0	64.0	5.0

Two of the Grade Nine treatment groups (100% group and the 50% group) made gains which are more than two times the gains of the Grade Eleven treatment groups. The Grade Nine 50% + oral group's gain was .3 words per T-unit higher than the Grade Eleven 50% + oral group's gain.

The relatively modest gains in mean T-unit length made by the Grade Eleven treatment groups could be accounted for by a number of factors. The reading measures give some indications of the ability levels in the Grade Nine and Grade Eleven studies. The greater gains in the mean T-unit length and in reading made by the treatment groups in the Grade Nine study might be attributed to the fact that these students were in a period of greater acceleration in language development than were the students in Grade Eleven who might have been in a period of stability, a plateau stage as described by Loban (1976).

For both studies, as determined by a two-way manova for treatment by teacher, the significance of teacher effects was higher than the treatment effects. This indicates that some teachers got better results with the sentence-combining exercises than others. In the Grade Eleven study, two teachers did not complete the posttest writing samples in the prescribed manner; that is, they did not provide the full forty minutes for the students to complete each of the four posttest writing samples. Some of the students, probably as a result of the hurried manner in which they did the writing samples, showed a post-test decrease in T-unit length as compared with the pretest writing samples.

Also, during the third and fourth quarters of the year, four of the seven Grade Eleven teachers expressed concern over the pressure they felt to prepare the students for the Regents Examination and to complete the sentence-combining exercises, particularly with the classes doing the thirty lessons. This sense of pressure may have had a negative effect on the teachers' attitudes toward the instruction.

Socioeconomic factors might also account for some of the difference. Two of the junior high schools in the Grade Nine study are in more affluent communities, and one of the private denominational schools draws students from more affluent families. Generally, students in such communities or from more favored socioeconomic areas are more highly motivated in their schoolwork.

In the Grade Eleven study the urban school is in a less favored socioeconomic area, and the three suburban schools are in primarily middle-class industrial communities. There were no Honors or Advanced classes. Of the twenty-eight classes participating in this study, five were classified by the teachers as above average, eleven as average, and twelve as below average.

The classes in the Grade Nine study were grouped heterogeneously, so it is difficult to compare Grade Nine with Grade Eleven levels.

As Loban (1976) pointed out, there seems to be no finding based on his research that supports the idea of basic ability differences among ethnic groups; what he did find is that those who use the full resources of language usually come from families with reasonably good socioeconomic status.

The students in the Grade Nine study used considerably fewer free modifiers than the students in the Grade Eleven study in both pretest and posttest writing samples, but the Grade Nine gains were significant while the Grade Eleven gains were not.

The fact that the Grade Eleven gains in the frequency of final free modifiers were not significant indicates that either the Grade Eleven students had reached a plateau stage in their use of this structure or that some of the Grade Eleven teachers were less effective in their instruction on final free modifiers than were the Grade Nine teachers.

The relative absence of noun substitutions in the Ninth-Graders' writing suggests that perhaps students in Grade Nine are simply not ready to adopt this structure even after practicing it in sentence-combining exercises.

The students in Grade Eleven did not use noun substitutions in subject position with great frequency, but they appeared more often in their writing than in that of the students in Grade Nine.

In the Grade Eleven study two of the three treatment groups increased in their use of noun substitutions: from .7 pretest to 1.7 posttest (100% group), and from .56 pretest to 1.0 posttest (50% group). There was however an erosion of −.2 for the 50% + oral group, from .83 pretest to .63 posttest. The control group made a gain of .02 from .48 pretest to .50 posttest.

Both the one-way manova, and the two-way, and the correlations of measures show that the effects of sentence-combining exercises on reading-comprehension skill were not significant. These findings do not lend support to one of the two hypotheses explored by Stotsky (1975) that enhanced syntactic skills through writing activities lead to improved reading comprehension. Stotsky herself suggests that part of the problem here might be the nature of the standardized test used. She also suggests that longer

treatment periods may be necessary before gains on reading tests can be statistically significant.

Both studies found that students with fifteen sentence-combining lessons made gains as great as the gains of those who had thirty lessons, and they both found that the addition of choral recitation did not make a significant difference.

The high probability levels for mean T-unit length ($p = .01$) and for final free modifiers ($p = .001$) of the Grade Nine study as compared to the Grade-Eleven levels ($p = .03$) for both mean T-unit length and noun substitutions indicate that the effects of sentence-combining exercises on the Grade-Nine students were much stronger than were the effects on the Grade-Eleven students.

On a two-way manova with covariates eliminated, the overall F-ratio for interaction effects was not significant for either study, a finding which makes it possible to determine the influence of the treatment and teacher effects separately.

In the Grade Nine study, some teachers had more effect on mean T-unit length, and some had more effect on final free modifiers, than did others. In the Grade-Eleven study, some teachers had more effect on reading than did others.

Again, the probability levels for Grade Nine are generally higher than the levels for Grade Eleven, indicating stronger effects of sentence-combining in Grade Nine than in Grade Eleven.

Polynomial regression of each posttest score of syntactic maturity on the corresponding pretest score was performed for both the Grade Nine and the Grade Eleven studies. In both studies the reduction due to the quadratic or cubic terms alone was extremely small. This indicates that students at all ability levels made significant syntactic gains as a result of sentence-combining exercises.

The Attitude Questionnaire

The students in the Grade-Eleven treatment groups showed a significant increase in their positive responses to the items concerning the usefulness of practicing writing sentences and on the importance of English skills after high school. On the item regarding the satisfaction they felt about their writing, the treatment groups indicated that they were less satisfied with their writing than the control group, which might suggest that they were more critical of their writing. There were two significant pre-post differences in the treatment groups' responses to the items about the usefulness of practicing writing sentences and the values of English skills.

The students in the Grade Nine study were on an average about 10% higher on their positive responses on all items than the students in Grade Eleven. On the item about the value of practicing writing sentences, the Grade-Nine treatment groups' positive posttest responses were 84%, the control groups' 69%. The Grade-Eleven students' positive posttest responses were 73%, the control groups' 54%. This would indicate that the students in both studies were more receptive to the sentence-combining exercises.

Overall Quality of Writing

In the Grade-Eleven study, twenty-five posttest writing samples on the ex-

pository theme were randomly selected from the 50% treatment group and compared to a random selection of twenty-five posttest writing samples of the control group on the same topic.

Procedures recommended by the Educational Testing Service for rating the College Board English Composition Test were used. The four teacher-raters used a descending four-point holistic scale. There was no significant difference found between the writing samples of the treatment group and the writing samples of the control group.

The finding was the same for both studies, although each researcher used a different evaluation procedure. This could indicate that one year's growth in this one aspect of composition is not notable enough to affect evaluation of the overall quality significantly. There is also the possibility that both sets of raters were not conditioned to focus on syntactic differences, and would not therefore focus on this particular aspect of writing.

Delayed Posttest

Students from all three treatment groups who had made gains in the three syntactic factors were asked to do two more writing samples. Fourteen sets of delayed posttest writing samples were submitted. These were analyzed, as were the pretest and posttest writing samples, for mean T-unit length, for final free modifiers, and for noun substitutions, and compared to the pretest and posttest scores of these students.

There was an increase in mean T-unit length in the post-delayed posttest, but it was not significant. In the Grade-Nine study there was an erosion in mean T-unit length of .8 in the post-delayed posttest. In the Grade-Eleven study there was an erosion of .8 final free modifiers in the post-delayed posttest. In noun substitutions there was a significant increase of four noun substitutions per 100 T-units.

These findings indicate that for mean T-unit length and final free modifiers continued reinforcement would seem to be necessary.

There seems to be a sudden surge in the use of noun substitutions in subject position by the students in the Grade-Eleven study three months after sentence-combining instruction had been terminated. This may well be an indication of the readiness factor, as Ney (1974) suggested. When students have reached a certain point in their language development, they will begin to use structures which are syntactically more mature.

The results of these delayed posttests also seem to give support to Ney's (1974) psycholinguistic model of the writing process, in which he attempts to account for the effects of sentence-combining exercises on changes in students' writing performance. According to Ney, the ability to use a structure not formerly observed in writing but cultivated through practice is not a result of changes in the linguistic ability of students (central effects) as Stotsky (1975) suggested, but rather this ability is the result of changes in certain skills of decoding and encoding (peripheral effects). The student in doing sentence-combining exercises develops his skill to store meaningful semantic units, to encode them in a given syntactic form, and to raise to conscious control innate linguistic resources.

These studies indicate that when the period of sentence-combining instruction is terminated, these skills seem subject to both erosion and sudden spurts.

Conclusions drawn from the delayed posttests in both the Grade-Nine study and the Grade-Eleven study must of necessity be very tentative because the writing samples were from small groups of selected students who gave strong evidence of growth in syntactic maturity. Nevertheless, the delayed posttests do give indications of certain trends in the development of syntactic maturity in written composition as a result of sentence-combining exercises.

Case Study

The student randomly selected for the case study was a talented art student of average ability, with pre-post reading scores of 70 and 73.

Seven of his compositions, selected from each of the four quarters of the year, were analyzed for the five syntactic factors used in the Grade-Nine study, with the addition of a frequency count of noun substitutions in subject position per 100 T-units.

This student used all of these structures in his pretest writing samples except the noun substitutions in subject position. He fluctuated in his use of them throughout the course of the sentence-combining instruction, but definite signs of growth began to emerge about halfway through the year. He began to use noun substitutions in the third quarter and then later in the posttest writing samples. He had very real problems in spelling, punctuation, and in editing his own writing, which persisted throughout the year. Nevertheless, in his final papers there was clear evidence of growth in all syntactic factors.

Both case studies, involving quite different types of students from two grade levels, provide valuable information about developmental trends in growth in syntactic maturity during a one-year program of sentence-combining instruction.

Both studies, the Grade-Nine and the Grade-Eleven studies, demonstrate the effectiveness of sentence-combining exercises on growth in syntactic maturity. Growth in mean T-unit length occurred at both levels but was greater in Grade Nine. Growth in final free modifiers was significant in the Grade-Nine study but not in the Grade-Eleven study. Growth in the use of noun substitutions in subject position occurred only in Grade Eleven.

Students at all levels of ability made significant gains in syntactic maturity.

Fifteen lessons were found to be adequate for students to make gains at both grade levels.

Both studies indicate that the addition of choral recitation did not make a significant difference.

Students in both Grade Nine and Grade Eleven reflected positive attitudes toward sentence-combining instruction.

The delayed posttests in Grades Nine and Eleven give additional information about the stability and erosion of gains after sentence-combining instruction has been terminated.

The Grade-Nine and Grade-Eleven case studies reveal developmental trends of students of varying ages, ability levels, and interests during the course of sentence-combining instruction.

Findings in both studies indicate that tests of the effects of sentence-combining exercises on reading and on the overall quality of writing need further development.

These parallel studies of the effects of sentence-combining exercises on the

syntactic maturity, overall quality of writing, and reading ability in Grades Nine and Eleven contributes these findings to previous research in sentence-combining:

> Sentence-combining exercises do enhance the growth of syntactic maturity for large numbers of students in Grades Nine and Eleven.
>
> Sentence-combining exercises did not have a significant effect on the overall quality of writing in Grades Nine and Eleven. Perhaps a single year's gains in this one aspect of writing, syntactic maturity, are not sufficient to affect the evaluation of the overall quality of writing. Periods of two or three years might make a more decisive difference.
>
> Sentence-combining exercises did not have a significant effect on reading-comprehension ability. Again, this may be because a year's growth in syntactic maturity may not affect reading-comprehension scores. Possibly, more sensitive instruments would reveal the specific effects of sentence-combining exercises on reading-comprehension skills.
>
> The students in Grades Nine and Eleven indicated by their positive responses to the attitude questionnaire that they found value in the sentence-combining exercises.

In 1965, Kellogg Hunt's study launched a number of sentence-combining studies directed toward enhancing students' syntactic fluency in writing. In 1977, Hunt continues to point the way. In the NCTE monograph *Evaluating Writing*, Hunt expresses his hope for the beginning of "rich and varied curricular experimentation" now that the English teaching profession has a theory of syntactic development that covers a broad range of structures and has more than one way of measuring progress toward adult skill in writing.

Moreover, he projects that as linguists, now beginning to pay a great deal of attention to surface-structure differences, study the relation between syntax and semantics, they are approaching the rhetoric of the sentence. "As they do, they may be able to say less vaguely some of the things rhetoricians have already said. And if they can say them less vaguely, they can say them more teachably. When that happens, we English teachers can be grateful."

PROBLEMS IN ANALYZING MATURITY IN COLLEGE AND ADULT WRITING

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Few research studies deserve to be called "breakthroughs," but Kellogg Hunt's *Grammatical Structures Written at Three Grade Levels* (1965a) certainly merits that classification. Hunt's recognition of the minimal terminal unit, or T-unit, as an indicator of written syntactic growth has become widely accepted as a reliable measurement of writing development, with subsequent studies showing increases at each grade level similar to Hunt's findings. But as much as Hunt's monograph threw light on the process of syntactic development in the grades, it also exposed the wide difference in syntactic characteristics between the prose of 12th graders near graduation and the essays of a group of professional writers whom Hunt labelled "skilled adults." Hunt measured 18 essays published in *The Atlantic* and *Harper's* as he had measured the writing of 4th, 8th, and 12th graders, discovering that in some respects, 12th graders write more like 4th graders than skilled adult writers. Most indicative of the dissimilarity between student and skilled adult writers are Hunt's figures for clause length, showing just a half-word difference between 8th and 12th graders, but a three-word difference between 12th graders and skilled adults.

Whether any of our students ever will *want* to write an essay of the kind that appears in *Harper's* and *The Atlantic* is hardly the point. Even the pedestrian prose of published adults is far above the syntactic level of 12th graders. For example, in a recent issue of *TV Guide*, a periodical which seems to practice the lowest-common-denominator formula of television itself, the eight feature articles contained a mean T-unit length of 17.3 words, over three words higher than Hunt's 12th graders, and a mean clause length of 10.7 words, over two words higher. Thus beginning college freshmen must travel a great distance to write sentences that even approximate those of skilled adults. This awareness has led to recent experiments extending sentence-combining instruction to writers of college age (Swan 1978a; Daiker, Kerek, and Morenberg 1978; Stewart 1978c). While no study of sentence combining has claimed that growth in syntactic maturity directly produces growth in overall quality, a widespread assumption has been that packing more words into T-units and clauses will lead to this result, that bigger is better.

In an age when *growth* retains favorable connotations only in the jingles of savings-and-loan associations, we can hardly expect this assumption to go unchallenged. Indeed, many of the same doubts expressed shortly after the emergence of sentence combining about the wisdom of accelerating growth in syntactic maturity are being heard again, objections similar to those of Christensen (1968b) and Moffett (1968), objections which Mellon dealt with in detail in his postscript to *Transformational Sentence-Combining* (1969). The most strident critics of sentence combining have virtually accused its proponents of advancing a chamber-of-commerce theory of rhetoric, resulting in the written mucilage we associate with social-science journals, legal briefs, and government regulations.

Sentence-combining advocates can, of course, answer this kind of charge

easily. "Bureaucratese" is as much a result of indiscriminate nominalization, presumably in the attempt to achieve a learned and impartial tone, as it is due to any syntactic structure including the overworked passive. The purpose of sentence combining, furthermore, is not to force students to write consistently longer sentences, but to make students more aware that the rules of English syntax allow incalculable possibilities for joining sentence-length elements.

Such criticism of sentence combining also ignores the possibility that sentence-combining practice may improve students' writing effectiveness, at least at the college level, for reasons other than increasing syntactic maturity. That we do not know why students exposed to intensive sentence-combining practice seem to become better writers is in part related to the scarcity of research in methods of teaching writing like sentence combining. Besides sentence combining, the most widely used approach of teaching composition based on syntactic skills is generative rhetoric (Christensen 1967, 1968a), a method, like sentence combining, which concentrates on sentence-level operations, but unlike sentence combining, requires students to supply content.

This past fall I conducted an experiment to test the effectiveness of generative rhetoric as a means of teaching college writing, involving 138 students in eight sections of freshman composition. Four experimental sections were taught by the generative-rhetoric approach, and four control sections were taught by a traditional approach, following the organization of a standard rhetoric handbook in use for three decades. The details of this experiment will be reported elsewhere (Faigley 1979a), and I will not belabor procedural aspects here. But considerable effort was made to match teachers with similar experience and effectiveness, to insure the amount of writing during the semester and the testing conditions were equivalent, and to control other variables which have been shown to influence writing.

At the beginning of the semester, as a pretest, free-writing samples were taken from all students on one of two matched impromptu topics. At the end of the semester the topics were switched and administered under the same conditions as a posttest. The student essays were coded, duplicated, and then analyzed according to three factors of syntactic maturity: words per T-unit, clauses per T-unit, and words per clause. In addition, two measurements which Christensen (1968b) thought to be indicative of a mature style were computed: the percentage of words in final nonrestrictive or "free" modifiers, and the percentage of T-units with final free modifiers, what Christensen called the "cumulative" sentence. There were no significant differences between the experimental and control groups on the pretest in any syntactic factor, but after one semester the experimental group had gained over a word in both clause and T-unit length and had registered over a fourfold increase in both the percentage of words in final free modifiers and the percentage of T-units with final free modifiers. The control group meanwhile had hardly budged from the pretest means. The differences between the experimental and control groups in these four factors at posttest are significant beyond the .001 level of confidence. Only in clauses per T-unit was there no significant rise on the experimental side, just as Hunt predicted for students of this level.

A measurement of overall quality was obtained by a holistic method of rating. To limit the potential for bias, the student papers were anonymously

coded, duplicated, and then taken to another state, where they were rated by experienced teachers of college writing who had no prior knowledge of the design of the experiment nor of the principles of generative rhetoric. After an initial training session was held in which the raters discussed the criteria for evaluation and looked at a selection of student papers written on the same topics but not included in the study, pretest and posttest papers were read simultaneously five separate times and ranked on a one-to-six scale. Once again there was virtually no difference between the two groups at the beginning of the semester, but by the end, the experimental group mean had risen over six-tenths of a point on the six-point scale, while the control group mean increased less than two-tenths of a point. The posttest difference is significant at the .01 level in the one-way analysis of covariance.

My interest, however, soon turned from the "horse race" aspect of the experiment to the attempt to discover what had accounted for the increased effectiveness of experimental students. Quite clearly, controlled syntactic practice had led to an increase in quantitative syntactic factors, but did this gain in syntactic maturity directly affect writing quality? In response to this question all data from pretest and posttest papers were considered in the multiple regression analysis to learn which of the five syntactic variables, if any, account for the variance in holistic rating. The results of this analysis present something of a paradox, for the three developmental factors of syntactic maturity, words per T-unit, clauses per T-unit, and words per clause, explain less than two percent of the variance in qualitative scores. This finding correlates with Nold and Freedman's (1977) discovery that standard developmental measures are not useful predictors of the quality of college essays. Of the remaining two syntactic indices in the multiple regression analysis, the percentage of T-units with final free modifiers had the strongest influence on writing effectiveness, accounting for 16 percent of the variance in holistic scores. Taken together, however, the five syntactic variables account for only 20 percent of the variance in holistic ratings. (See Table 1.) The source of the remaining variance is unknown, but content must explain a large portion of it. A second experiment conducted by Freedman (1977), in which the essays of college students were rewritten to be strong or weak in content, organization, sentence structure, and mechanics, showed that content and organization influence holistic judgment more than sentence structure and mechanics.

Table 1
Stepwise Regression on Five Syntactic Variables
as Predictors of Holistic Rating (N = 138)

Step Number	Variable	B	Standard Error	F	R^2	R^2 Change
1	% T-units w/FFM	.170	1.413	27.27	.167	.167
2	% Words in FFM	.039	1.405	15.09	.183	.016
3	Words/Clause	.016	1.395	11.13	.199	.016
4	Words/T-unit	.068	1.400	8.31	.200	.001
5	Clauses/T-unit	.050	1.403	6.70	.202	.002

The difficulties of correlating syntactic factors with writing effectiveness perhaps are most evident in regard to tone. Even if we could agree on definitive categories for aims of discourse, syntactic profiles of well written essays within a given category will differ markedly because of modulations in tone. Skilled writers frequently write prose which is stark in terms of syntactic maturity and modification, but in most cases this is a conscious effort determined by the tone the writer seeks to achieve. The following paragraph by John Parrish (1972) describes the arrival in Vietnam of American doctors during the recent war:

> Captain Street walked with us to the hospital compound to show us our new place of work. He was in no hurry. He had spent this entire tour of duty in Phu Bai except when in Da Nang on business. He was going home in eighty more days, and anything that would take up a few hours, or even minutes, was welcome. We were his most recent time passers.

Beginning college freshmen usually write prose more syntactically complex than the passage quoted above, but rarely show awareness of the influence of syntax on tone. Compare the following student example:

> I would walk around and whenever I would run into a friend of mine or a fellow teammate I would always have a smile and something to say about the game that night. When warming up before the beginning of the game, I would be clapping people on the back and telling them to fire up, and get ready, and so on. This incident was when my role became the biggest because I had to show to my teammates that I was fired up and ready to go when I actually would have the butterflies so bad that I would have to take stomach relievers before the game would actually start.

The complexity of the clause structure in this paragraph makes it difficult to read and uninteresting. The last sentence in particular is out of control, with a nominal followed by five successive clauses, impeding rather than advancing the narrative.

Another college freshman's paper illustrates the difficulties presented by tone in analyzing maturity. The syntax of the example below seems quite immature on first reading:

> My home is in Belcourt, North Dakota. I live out in the country. The town is fairly small with very little for teenagers to do other than visit. If one wants excitement, one goes to a neighboring town. My former high school wasn't much for excitement either. There were clubs and athletic events, but when you live out in the country, it's difficult to get a ride into town. I also worked all my years of high school after school, and I was editor of our school paper. I have to admit I was very studious. That's about all I could do and so that's all I did. Sure it all paid off in the end with awards and scho-

> lar-hips, but I didn't have a social life to talk about, and I didn't really care for one either.

On a second reading this passage does not seem nearly so facile as it does the first time through. The setting of the paper is the Turtle Mountain Indian reservation, an island of infertile glacial morraines surrounded by some of the most productive farmland in North America, and the writer goes on to discuss the effects of poverty and alcoholism on her family. The bare texture helps to create an appropriate tone for the description of a place where little happens.

The perplexities of syntactic analysis of maturity caused by tone are not restricted to developmental measures. The percentage of words in or T-units with final free modifiers has a recognized effect on quality, even in persuasive writing of college students (Nold and Freedman 1977). Skilled adult writers use about twice as many words in free modifiers as college freshmen who tend to branch these constructions predominantly to the left rather than to the right as professionals do (Faigley 1979b). The use of free modifiers as an indicator of maturity, however, has several inherent limitations. Christensen defined free modifiers as any element before the base clause besides conjunctions and any medial or final element set off by punctuation. Consequently, the proportion of free modifiers depends to some extent upon the punctuation skills of a writer, and there is evidence suggesting that college writers avoid constructions which they are not sure how to punctuate (Gebhard 1978). Another problem is what to do with fragments punctuated as sentences which function like free modifiers but technically are not free modifiers. Also, by the above definition certain moveable adverbial phrases and clauses count as free modifiers if they come before the base clause but not after it. Even considering just final position, a researcher quickly notices that many student free modifiers are "which" clauses, surely no earmark of accomplished prose. Structures in the final free modifiers of skilled writers are frequently reduced or "near" clauses, structures that Hunt (1977) described as "late blooming" and ones that add considerably to clause length, a point Christensen overlooked in his criticism of Hunt's indices of maturity (1968b).

A more fundamental kind of problem is that a high percentage of T-units with final free modifiers, even with the structures predominant in skilled writing, is no guarantee of quality. The Parrish example quoted earlier contains only one free modifier in contrast to the following student example taken from a paper loaded with these constructions:

> We grew up together, huddling together to combat the anxieties of adolescence, wanting the best for everyone, becoming used to the world which destroyed some of our young imaginative concepts of always coping with things together. Of course, we must become individuals, but not out on a limb alone, thus being the relationship between she and I. She was always someone to care about, so pretty and alive, knowing each other since the age of ten, fading so far apart the last few years, a misunderstanding that can only be resolved with compromise.

There seems to be an account of the vicissitudes of young love, told in the idiom of bubblegum-rock lyrics, hidden in this tangle of phrases. The student

has mastered the mechanics of these structures, but has very little notion of their rhetorical purpose.

The lack of correlation of syntactic factors with overall quality in college essays poses a second paradox: if the level of syntactic maturity has little consequence on the overall effectiveness of college writers, then why do sentence combining and generative rhetoric, methods emphasizing syntactic skills, produce significantly larger increases in overall quality than a traditional method supposedly emphasizing content?

The answer must be that sentence combining and generative rhetoric affect some part of the writing process more fundamental than the enhancement of syntactic maturity, that besides expanding the student's syntactic repertoire, these methods offer students insight into structure in writing. In exercises set in a rhetorical context, students make syntactic decisions based on the rhetorical relationships among the elements of the sentence: whether to rank coordinate elements in importance by shifting one to a subordinate structure, (whether to reinforce a similarity with parallel constructions), whether to accentuate a particular element by placing it at the beginning or at the end. The crux of a syntactic approach to composition is exposing to students that structural relationships within the sentence can be found beyond the sentence level. This territory is almost unmapped, but there have been several noteworthy explorations. Linguists, such as Pike (1964), Chafe (1972), Grimes (1975), Halliday and Hasan (1976), and rhetoricians, such as Young and Becker (1965), Christensen (1967), Pitkin (1969), and D'Angelo (1975), have considered discourse structure in sentences, paragraphs, and larger units as symbolic representation of thought. One such attempt is Winterowd's "The Grammar of Coherence" (1970), which argues that the internal relationships in any stretch of discourse must be finite and therefore expressable. Winterowd posits seven such relationships (probably there are more), but the ease in which these expressed or implied relationships can be displayed attests to their existence.

Such relationships beyond the sentence might be measurable through the analysis of the appropriate use of transitional words or by counting changes in diction appropriate to purpose, allowing the possibility of indices of maturity sensitive to context. Odell (1977) has proposed a scheme for analyzing maturity along these lines based on linguistic cues which make specific reference to context. But no matter how we choose to augment syntactic measurements of maturity, we may never achieve a quantitative description of mature writing broadly applicable to student and skilled-adult prose written for different purposes and audiences, and perhaps the association of developmental measures with quality has obscured some of the more interesting questions raised by research in syntactic maturity.

If syntactic research has not given us pedagogical mandates, it has demonstrated clear trends of syntactic development exist through the grades and likely through college. This knowledge remains central to the design and implementation of writing programs, especially to those such as sentence combining that concentrate on syntactic skills. Hunt's research (1965a, 1970) has shown us that the sentences of skilled adult writers are not simply longer than those of college writers, they are more densely embedded and more varied in a number of ways. But what is ultimately important to a writing

program is that students focusing upon the syntactic component of the writing process are able to grasp principles which shape and organize larger units of discourse. To this end syntactic approaches to composition have become exciting methods for teachers and potent methods for students.

WORDS ENOUGH AND TIME: SYNTAX AND ERROR ONE YEAR AFTER

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Introduction

Methods to improve the quality of student writing are as elusive as Marvell's coy mistress. Sentence-combining practice is a seductive teaching technique. Many of us who have used sentence-combining exercises in the classroom have found that students enjoy the syntactic play and, in fact, appear with practice to become more adept at experimenting with a greater variety of sentence patterns. These gains are indicated by an increase in their words per T-unit.

In a study that the current researchers conducted last year (Maimon and Nodine 1978), we refined the W/TU measure to some extent by examining the patterns of syntactic error that develop when students are given practice in sentence combining. But the examination of error is only a slight refinement. We still do not know whether the longer, more error-free sentences are true or wanton. In the earlier study and in this one, we are looking only at the possibility that some training in sentence combining may help students to construct sentences with more flexibility and ease — an ability that will free them to give more attention to the other complex elements in any writing task.

Gebhard's (1978) study of writing quality and syntax confirms these cautionary words. She found that "composition ability is not a matter of the knowledge and utilization of certain syntactic structures but rather a basic sensitivity to the nuances of a special dialect" — the standard written dialect.

Morenberg, Daiker, and Kerek, on the other hand, have recently presented strong evidence that sentence-combining practice may hold greater promise than we are ready to suggest in this study. Their experimental group, who took a rhetorically based course in sentence combining, "significantly outgained the control group even in the qualities especially cultivated in conventional class — ideas and diction and usage" (1978: 255). Stewart also presents evidence that a six-week module of sentence combining will result in "positive effects in the area of syntactic maturity and a good likelihood of some improvement in writing quality as well" (1978: 266).

Our work does not directly address the relationship of syntactic fluency to overall writing quality. But our premise is similar to that of Morenberg, Daiker, Kerek (1978) and Stewart (1978c) in that we assume that increased practice with sentence manipulations will make such manipulations routine and free the students to pay attention to other parts of the writing task. Another contribution of our research is our view of sentence errors as windows on the minds of students who have learned to combine sentences. As students are learning to make their sentence manipulations a matter of routine, their reach may exceed their grasp and they may err in the process of reaching. If sentence-combining practice really accomplishes what we expect, students will finally become proficient enough in sentence manipulation so that their errors will decrease, although not disappear.

Summary of Maimon and Nodine (1978)

The original study investigated the effect of a year-long composition course which used fifteen or twenty minutes of sentence-combining exercises (O'Hare 1975 and Strong 1973) once a week over a period of several weeks. The sentence combinations were always discussed in terms of rhetorical impact and semantic value. Throughout the year, we measured the abilities of our fourteen freshman-composition students for evidence of growth in their control of syntax. We also hypothesized that syntactic fluency varies as a function of the type of writing assignment. The assignments examined were pre- and post-test writing of Hunt's aluminum passage, an assignment in which sentence combining is the only task, since all problems of invention and development are removed. A second pre- and post-test assignment was an expository one in which the writers explained why they selected a particular person as a lunch partner. The other assignment that was administered at the same time as the posttest aluminum and lunch essays required that the students answer a question about *Hamlet* and thus confront a topic that taxed their analytic and conceptual abilities in a way that the other assignments did not.

On all assignments we used two measures to identify growth in syntactic control. First, we measured W/TU, as devised and described by Hunt (1970a). Then we looked at a category of error that we defined as errors in syntax, as opposed to errors in scribal or graphical conventions. We based our definition of these syntactic errors on the category designated "Grammar" in Edward P.J. Corbett's *The Little English Handbook*, 2nd edition (1977). The errors we considered are as follows: faulty subject-verb agreement, dangling verbal, misplaced modifier, fragment, vague pronoun reference, faulty parallelism, comma splice/run-on sentence. We call these errors "embedding errors" because we hypothesized that the errors just named would be more likely to occur in the students' longer T-units, since students would in these cases combine syntactic elements beyond their capacity to do so without error.

After six or seven months of instruction, the subjects showed significant growth in W/TU in both the aluminum passage and the lunch essay. W/TU for the *Hamlet* assignment fell between the aluminum posttest and the lunch essay posttest, suggesting that the content of each assignment affected the control students were able to impose upon syntax when their "cognitive space" was "loaded" (Nold 1978) with other demands of the assignment (Perron 1976a).

The second measure of syntactic control was the number of embedding errors per essay. Here, too, we saw evidence that as the cognitive demands of the assignment increased, the number of embedding errors increased. In the lunch-essay posttest, errors dropped to their lowest level; and in the *Hamlet* essay, errors were moderately high. (See Table 2.)

Table 1
List and Examples of Embedding Errors from Freshman Compositions

Faulty subject-verb agreement	1. This liquid is put through several other processes which finally *yields* a white, powdery chemical called alumina [italics added].

Dangling verbal	1. For example, considering the way Hamlet treats Ophelia, there is almost a corruptness in his mind. 2. Being from different social classes, her father chose to keep her from Hamlet until it was too late.
Misplaced modifier	1. I have chosen to have lunch with Nicole Diver, the female counterpart of Dick Diver, based on F. Scott Fitzgerald's novel *Tender Is the Night.*
Fragment	1. A true madness that eventually leads her into death — a death of suicide.
Vague pronoun reference	1. The theme of poisoning begins with the death of old King Hamlet, who was murdered by his brother when a leperous distillment was poured into *his* ear while *he* slept. 2. I have watched the show only about three times, which I feel was a waste of time.
Faulty parallelism	1. They grind the bauxite, put it into pressure tanks, and a mass is formed.
Comma splice/run-on sentence	1. But Ophelia is not the only one pervaded by false pretense the entire Court of Denmark lived and worked under falsehoods. 2. But Claudius and his henchman, Polonius, are determined that the state of affairs that they have brought about should remain so, thus, they try to hide their guilt with more and more acts of evil, that envelop more and more innocent lives.

Table 2
Comparison of measures of syntactic skills for various writing assignments for original study and one-year follow up

Original study (Maimon & Nodine 1978)

Assignment	Mean W/TU	Mean W/TU for TU with error	Mean embedding errors/100 words	Mean words essay
Aluminum pretest	11.99	14.25	.48	117.9
Professional writers (from Hunt 1970)	14.78			
Aluminum posttest	16.22	18.61	1.25	103.4
Lunch pretest	17.68	16.71	.93	123.1
Lunch posttest	22.98	22.57	.34	149.0
Hamlet	20.01	22.11	1.02	403.1

One-year follow up (57% of original subjects)

Assignment	Mean W/TU	Mean W/TU for TU with error	Mean embedding errors/100 words	Mean words essay	Mean paragraphs
Paraphrase	24.91	28.71	.52	166.7	1.4
Moral Dilemma	20.06	12.58	1.04	144.85	1.8

Our earlier study provides context for syntactic measures that are based solely on word counts. First of all, length of T-unit is partly a function of the type and difficulty of the writing assignment. Second, researchers should consider the relationship between syntactic errors and syntactic manipulation. In most of our writing assignments, students made more errors in their longer T-units. (See Table 2.) Former studies had discarded T-units with error. We suggest that these errors may provide a window to the students' cognitive processes.

In the current study, we extend our investigation of the relationship between complex sentence structures and error. We also look at two different writing assignments in terms of the challenge they present to students' ease of syntactic manipulation. Finally, we look at the long-term effect of sentence-combining practice on length of T-unit and on number of embedding errors.

After a full year without sentence-combining practice, will our original freshman students, now in the throes of sophomore slump, be able to write T-units which are as long as those written at the end of their freshman year? Will flexibility in syntactic manipulation have become a matter of routine? What will be the relationship between error and length of T-unit now that these sophomores are no longer consciously inflating their T-units possibly to please their freshman English instructor? At the end of their freshman year, our students could write T-units with enough words, according to Hunt's normative data. But what will be the effect of time?

Methods

Subjects

The eight subjects in the follow-up study were all sophomores at Beaver College, a four-year liberal arts college in suburban Philadelphia. They were the students remaining at the College from the population of fourteen students in the original study.

Assignments

In May 1978, during final exam week, all Beaver College students were required to participate in an all-college writing inventory. Under timed, test conditions, the students completed two assignments. First, the students were to write a one-paragraph paraphrase of an 800-word passage, selected from a college-level text. The passage, H. C. Levinson's "Science and Superstition," was selected because it could be read without specialized knowledge of particular words. Nonetheless, many students reported that they found the passage difficult to understand. This exercise was designed to test the students' ability

to read as well as their ability to communicate their understanding in clear, error-free English.

The second writing assignment was designed to test the students' ability to write clearly and correctly on an exercise that also taxed their powers of invention, organization, and development. The topic was selected so as to give no advantage to students with specialized knowledge of a particular field. The instructions are shown here:

> The following situation has been explained to you by one of your professors. Your task is to decide the moral issue and to explain objectively your reasoning on the subject to an audience that includes your classmates and your instructor. There is no right or wrong answer. The important part of your task is the consistency and clarity of your explanation. You are writing from the point of view of a person who was not there in Eastern Europe but was later informed of the facts of the situation.
>
> You may make rough notes, but leave time to write your final copy *on this paper*. You may continue on the reverse, if you wish. This writing sample is timed so that most students will finish a first draft with time to spare for revision. Do not hesitate to cross-out or insert new phrases. Be sure to proofread for spelling and for conformity to standard grammar. Thus, this writing sample will be read as a revised first draft.
>
> > During World War II a group of Jews in Eastern Europe, doomed to a Nazi concentration camp and probable death, attempts to escape to a neutral country. In the group is a mother with a small baby. At a dangerous border crossing the group crouches in the darkness, waiting for a patrol to pass. Hungry and tired, the baby begins to cry. Someone in the group hisses, "Smother that baby or we're all dead!"
>
> What should the mother do? Explain *your reasoning*.

We assume that our sophomore subjects had no idea that we would be selecting their essays from the rest to examine them for W/TU and number of errors. Along with all other Beaver College students, they were producing two pieces of writing at a time of the year when they were under stress from many other sources.

Results

Length of Essay

For purposes of comparison, we calculated an average length for each essay. Table 2 shows that students wrote an average of 166.75 words on the paraphrase and an average of 144.85 words on the moral dilemma. Thus, both pieces of discourse were of moderate length, although it is puzzling to note

that the students wrote somewhat longer passages on the paraphrase assignment than they did on the moral dilemma.

Words per T-unit (W/TU)

For each student on each writing assignment, we obtained a score (W/TU), which we calculated by determining the mean number of words per T-unit. The averages of these scores for each writing assignment are presented in the lower half of Table 2. On the paraphrase assignment, the scores average 24.91 W/TU, and the scores on the moral dilemma average 20.06 W/TU. Comparison with the upper half of Table 2 shows that the later W/TU scores are at the same level or higher than those from the previous year.

Embedding Errors

Using our definition of syntactic errors, which we call "embedding errors," we calculated the mean number of these errors per 100 words. Table 1 gives an example of each type of embedding error that was counted. Table 2 shows a comparison of the error rate for each essay in the original study and in the follow-up study. Although there were twice as many errors in the moral-dilemma assignment as there were in the paraphrase, the error rates on both parts of the follow-up study were at a moderate level, compared to the rates from the previous year.

As we had done the year before, we averaged the W/TU for the T-units that contained embedding errors. For the paraphrase assignment, the flawed T-units were longer than the average T-unit (compare 28.71 with 24.91), but for the moral dilemma the flawed T-units were shorter than the average T-unit (compare 12.58 with 20.06). Thus, in the paraphrase, students made fewer errors but did so in the longer T-units, whereas students made more errors in their shorter T-units on the moral dilemma assignment.

Discussion

In terms of the measures used in this investigation — average length of T-unit and number of embedding errors — the syntactic skill of the sophomores in this follow-up study showed no decline and even showed some improvement. This finding must be viewed in the context of Albert Kitzhaber's Darmouth study (1963), which was a major investigation of the writing of college students after the freshman year. In the Kitzhaber study, "sophomores made almost as many errors in their writing after a year and a half of college as freshmen do at the beginning of English 1 and more than freshmen make at the end of English 1. Seniors are worse than sophomores, having made more errors in their papers than freshmen do at the beginning of English 1" (1963: 109).

Kitzhaber's definition of error was much more inclusive and negative than ours. Kitzhaber did not confine his investigation to syntax but instead established counts for thematic, rhetorical, lexical, and graphical elements of writing. If we look only at the type of error that Kitzhaber associates with sentences, we find that students at the end of one year of freshman composition were making an average of 2.56 sentence errors (per 1,000 words), while sophomores made an average of 5.99 and seniors an average of 8.24 (1963: 109). Clearly, our small study runs counter to Kitzhaber's finding that sophomores make significantly more syntactic errors than they did when they were freshmen.

Kitzhaber measured quality of writing strictly in terms of presence or absence of error. More errors indicated poorer quality. In the area of syntactic adroitness, we have used the additional measure of average length of T-unit. And we have found that our sophomores do not lose ground on this measure either. Clearly, the subjects in our study challenge Kitzhaber's findings that second-year college students always are syntactically — as well as etymologically — *sophomores* ("wise fools").

Our sophomore subjects outran "time's winged chariot" and maintained the ability to combine a sufficiency of words without error. But was this achievement the result of the sentence-combining exercises which they had done as freshmen? Was the maintenance of their syntactic ability the result of their freshman-composition training as a whole? Or were there other factors?

Even in our original study we found it impossible to separate the effects of the sentence-combining practice from the effects of the freshman-composition course as a whole. But the positive results of the follow-up study must be seen in terms of another complicating factor. For several years, Beaver College has been working toward a college-wide commitment to good writing as the responsibility of the entire faculty. A few months after the completion of the original study, Beaver college received a grant from the National Endowment for the Humanities to reinforce the college-wide writing program through writing workshops and seminars for all faculty. Ironically, Kitzhaber had proposed that the only solution to backsliding after freshman English would involve the cooperative efforts of the majority of College faculty in all departments. Kitzhaber saw such cooperation as highly improbable, but we are achieving such cooperation at Beaver College. Kitzhaber said nothing about the efficacy of sentence-combining, which had not been developed as a classroom technique in 1963. The fact that our sophomores maintained their syntactic adeptness may have more to do with the college-wide writing program than it does with sentence-combining.

One way to sort out these variables would be to compare our treatment group to a reference group selected from the wider pool of Beaver sophomores. Since we had available the papers of all sophomores, we identified a group of thirty-two students who had been in sections of freshman composition in which no sentence-combining exercises were presented. And indeed we found that this group wrote shorter T-units with more embedding errors on both parts of the writing task. We do not report this finding in our results section because we found that our reference group and our treatment group were not really comparable, since the average verbal SAT scores of our treatment group turned out to be seventy points higher than our reference group. Given the small scope of our study and the above complicating factors, we can hardly say anything conclusive about the efficacy of sentence-combining practice. We can simply raise some important questions.

One of these questions involves the impact of the type of writing assignment on the students' adeptness in syntactic manipulation. Students wrote longer T-units with fewer errors on the paraphrase task. Curiously, the paraphrases ($\bar{x}$ words = 166.7) were longer than the open-ended moral dilemmas ($\bar{x}$ words = 144). The paraphrase instructions specifically require a single paragraph (although several students ignored this constraint), while proctors for the writing inventory encouraged students to write *more than one* para-

graph on the moral dilemma (although several students ignored this advice).

Since the moral dilemma was the second writing task, administered after only a pause short enough to collect the paraphrase papers, the students' lower syntactic performance on the second task may be the result of fatigue. Furthermore, the longer T-units on the paraphrase may have been easier to achieve through constructions of indirect discourse like, "The author states that . . ." We believe, however, that the students were able to write longer T-units with fewer errors on the paraphrase assignment mainly because they were writing from someone else's ideas. The students were thus able to give more of their attention and "cognitive space" (Nold 1978) to the manipulation of syntax. Even if the students had an inaccurate notion of the main idea of the original passage (and many students badly misread the passage), they still had something to say. The moral-dilemma exercise, like the *Hamlet* assignment in our previous study (Maimon and Nodine 1978), taxed the students' powers of invention. When those powers are taxed, we propose, the student has less time and energy for concern with sentence variation and error avoidance.

The relationship of problems of invention to measures of syntactic manipulation needs further study, as does the relationship of syntax to mode of discourse. These matters lead us to the coyest issue of all — the link between syntactic skill and the overall quality of a piece of writing. Nothing in this follow-up investigation indicates that we should change the view that we articulated in the original study:

"Even when W/TU is correlated with data on error, there is still no proof of anything except the ability to manipulate syntactic elements. Although that manipulative ability may produce skilled professional writing, that same ability may produce bureaucratic excesses, jargon, and gobbledygook" (Maimon and Nodine 1978). And indeed some of the longer T-units in this study are awful: "Present day science has not changed ancient beliefs, although it has maybe re-arranged the order to let them be of a lesser standard on the intellect scale." At a recent conference William Labov (1978) suggested that we teach students to "uncombine" sentences.

Composition teachers are not wrong to *carpe diem* — seize the day — and indulge their classes in the syntactic play available in sentence-combining exercises. But all of us who teach composition with a sense of humility in the face of the complexity and mystery of our task are convinced that sentence combining "cannot make our sun/Stand still."

THE RELATIONSHIP OF READING COMPREHENSION TO SYNTACTIC MATURITY AND WRITING EFFECTIVENESS

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Educators have tried, without success, to develop pedagogical procedures for improving students' reading comprehension skills. Thus they have been encouraged recently by studies suggesting that reading comprehension may improve as a result of increased syntactic skills learned through sentence-combining practice (e.g. Stotsky 1975). There is, however, an alternative framework in which to view the relationship between reading comprehension and sentence combining.

The basic question addressed by this article is a simple one: Does instruction in sentence combining at the college level result in improved reading comprehension *or* does, instead, reading comprehension predict to some extent the effectiveness of instruction in sentence combining?

Methodology

Since the data used in this study are described extensively by Morenberg, Daiker, and Kerek (1978), only the briefest of descriptions will be provided in this section.

Sample

Utilizing a pseudo-random procedure, 290 college freshmen were assigned either to a traditional freshman-English course ($n_1 = 139$) or to a sentence-combining freshman-English course ($n_2 = 151$). The pretest groups proved comparable.

Variables

All subjects were pretested and posttested on three general sets of variables: syntactic maturity (words per clause, clauses per T-unit, and words per T-unit); writing effectiveness (analytic and holistic ratings as determined by a panel of raters); and, finally, reading skills (STEP II, Form 1A). Scores on the three sets of variables are summarized in Table 1.

Table 1

Mean pre- and post-test scores by experimental (sentence combining) and control (traditional freshman English) on the variables of syntactic maturity, writing effectiveness, and reading.

	Pre-Test		Post-Test	
	Experimental	Control	Experimental	Control
Syntactic Maturity				
Words-per-clause	8.75	8.80	9.64	8.67
Words-per-T-unit	15.31	15.00	16.05	14.95
Clause-per-T-unit	1.76	1.72	1.68	1.73

Writing Effectiveness (Analytic)				
Ideas	3.22	3.15	3.39	3.20
Supporting Detail	3.22	3.09	3.69	3.38
Organization and Coherence	3.09	3.08	3.44	3.38
Voice	3.43	3.29	3.73	3.41
Sentence Structure	3.21	3.10	3.59	3.30
Diction and Usage	2.93	2.98	3.32	3.18
Writing Effectiveness (Holistic)	3.20	3.16	3.73	3.37
Reading				
Vocabulary	16.44	16.37	18.58	18.07
Comprehension	20.88	20.66	21.62	21.24
Composite	37.31	37.03	40.36	39.45

The parameters of syntactic maturity are those designated by Hunt (1965a; 1970a). The holistic rating of writing effectiveness represents impressionistic evaluation, on a 1 to 6 scale, of how well the writer is able to produce a mature, skillfully written composition. The analytic rating, also scored on a 1 to 6 scale, separates six components of writing quality: ideas, supporting detail, organization and coherence, voice, sentence structure, and diction and usage. The reading test used is a standardized college-level test composed of sixty items, thirty dealing with reading comprehension and thirty dealing with vocabulary.

Morenberg et al. (1978) concluded that the sentence-combining experience did result in significant changes in certain areas of syntactic maturity and writing effectiveness but not in the area of reading comprehension.

In this paper we speculated that the effectiveness of teaching sentence combining might be moderated by only certain levels of reading, not necessarily reading in general. We were particularly interested in assessing subgroups defined by the quartile scores on the reading test, i.e. lowest 25 percent, second lowest 25 percent, second highest 25 percent and highest 25 percent. How did the experimental students of the four reading groups compare in the syntactic-maturity measures and in the qualitative ratings? How similar were the control students of the four reading groups?

These questions are multivariate-analysis questions. In particular, they are discriminant-analysis questions (Tatsuoka 1971). Discriminant analysis is used here to determine (1) whether the reading-classification groups are different in syntactic maturity and in ratings on writing effectiveness, and, if they are different, then (2) what combination or subset of the variables is most effective in discriminating among the reading-classification groups.

Reading Subgroups

Logically, there are three ways of quantifying the reading scores: pretest scores, posttest scores and change scores. The results of an analysis and the generalizations will be influenced as a function of type of quantification used. We preferred to form our reading subgroups within treatment subgroups, four quartile subgroups in the control group and four subgroups in the experimental group, for each of the three methods of quantification. Furthermore, we preferred to look at groupings as a function of (1) the vocabulary subtest, (2) the comprehension subtest and (3) the composite reading score on the reading test. Finally, the analyses were performed separately within the experimental

group and within the control group. With all of these various groupings a total of eighteen different multivariate analyses were conducted, utilizing reading as the grouping variable. (Table 2).

Table 2

Chi square for the first discriminant function in each of eighteen discriminant analyses, using various reading scores as the quartile grouping variable (DF = 27).

	Experimental			Control		
	Pre	Post	Change	Pre	Post	Change
	Reading Comprehension Subtest					
Syntactic Maturity and Writing Skill	33.90	28.78	30.32	39.18	32.59	37.32
	Reading Vocabulary Subtest					
Syntactic Maturity and Writing Skill	25.23	32.16	36.61	29.73	31.15	26.86
	Reading Comprehension — Composite					
Syntactic Maturity and Writing Skill	43.05*	32.51	26.02	30.57	37.52	28.36

*Significant at the .05 level.

There is only one significant chi square in Table 2, the chi square describing the difference between the reading pre-test quartile groupings in the experimental group. Specifically, at least one quartile group is significantly different from one or more of the other quartile groups as a function of some combination of change scores on the variables of syntactic maturity and writing effectiveness.

Reading Composite as a Predictor of the Effectiveness of Sentence Combining

Ordinarily when one finds that the first discriminant function is significant, a second discriminant function is computed on the basis of an analysis of the residuals of the first discriminant function. In the analysis of reading pre-test quartiles and of changes in the two general sets of variables, the first discriminant function is significant, X^2 (27) = 43.05, $p < .05$. But the second discriminant function is not significantly greater than what one might expect by chance, X^2 (16) = 16.57, $p = .41$ (Table 3).

Table 3

Standardized discriminant function coefficients for predicting reading posttest quartile groupings on the basis of syntactic maturity and writing skill (Sentence-Combining Group).

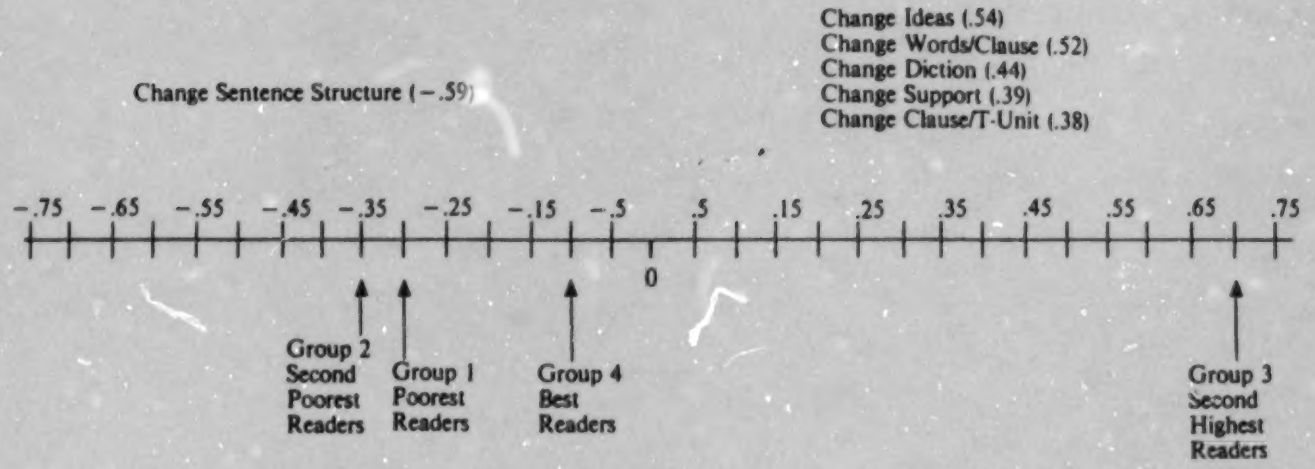
Variable	Coefficient
Change words-per-clause	.52
Change clause-per-T-unit	.38
Change Ideas	.54
Change Supporting Detail	.39
Change Organization and Coherence	−.12
Change Voice	.11
Change Sentence Structure	−.59
Change Diction and Usage	.44
Change Holistic	.17

For this particular analysis a discriminant function may be thought of as a theoretical variable defined by certain specific variables of the general variable groups of syntactic maturity and writing effectiveness. Each of the four subgroups has a computed mean on this theoretical variable. Furthermore, at least one of the subgroup means on this discriminant function is significantly different from the other subgroup means. To understand what a discriminant function represents, one examines the coefficients or specialized regression weights associated with the variables. The larger the coefficient the more definitive the variable is of the discriminant function. It is suggested that half of the largest coefficient be taken to define the minimal magnitude of the coefficients that will be retained for interpretation. For this analysis the largest coefficient is −.59, and therefore the minimal interpretatable coefficient should be approximately .30. All of the variables, save holistic rating, change in organization, and change in voice, then, define the discriminant function.

This particular discriminant function is bipolar, with the lowest average discriminant scores being associated with the lowest two reading groups: −.31 for the lowest reading group, and −.35 for the second lowest reading group. The largest average discriminant score is associated with the second highest reading group, .69. The highest reading group obtained an average discriminant score of −.10, or almost zero. The general interpretation of a discriminant analysis is that those groups with high positive discriminant scores obtained high scores on the variables having high positive discriminant coefficients, and those groups with substantial negative discriminant scores obtained high scores on the variables having substantial negative discriminant coefficients. A variable with a negligible discriminant coefficient simply does not contribute to the discrimination or group differences that are observed on the discriminant function. The results associated with Table 3 are presented within this interpretation framework as Figure 1.

Figure 1 shows that Groups 1 and 2, the lowest one-half of the reading group, scored significantly lower than Group 3, whose reading scores are represented by the percentile ranks of 51 to 75. The effectiveness of the sentence-

Figure 1
Group Placement on Discriminant Function


Change Ideas (.54)
Change Words/Clause (.52)
Change Diction (.44)
Change Support (.39)
Change Clause/T-Unit (.38)
Change Sentence Structure (−.59)
−.75 −.65 −.55 −.45 −.35 −.25 −.15 −.5 .5 .15 .25 .35 .45 .55 .65 .75
0
Group 2 Second Poorest Readers
Group 1 Poorest Readers
Group 4 Best Readers
Group 3 Second Highest Readers

combining instruction for the poorest readers shows up in an increase in sentence-structure ratings. For the Group 3 readers, the effectiveness of sentence-combining instruction manifests itself as an increase in ideas, words-per-clause, diction, support, and clause-per-T-unit.

Discussion

Several things are clear from the analyses. The reading variable exerted virtually no effects in the control group. In this group there are no apparent linear or non-linear relationships between the syntactic maturity and writing effectiveness variables on the one hand, and reading on the other. Had they existed, such relationships would have been obviated by at least one significant discriminant function.

The fact that pre-post differences in reading, as represented by quartile groups, showed no relationship to change in syntactic maturity and writing effectiveness in either the control or the experimental group suggests that the changes effected by either sentence combining or traditonal instruction did not occur in the same systematic fashion in reading as they did in syntactic maturity and writing effectiveness. This of course is not a totally unexpected finding, as Morenberg et al. (1978) found no evidence of any change in the reading scores. Thus, the change from which the quartile groupings were determined in both experimental and control groups was most likely "chance change," and certainly should not have been systematically related to the non-change observed in the syntactic-maturity variables and the writing-effectiveness variables of the experimental group.

It follows logically from this discussion that there were no relationships between quartile grouping on post-reading scores and the variables of syntactic maturity and writing effectiveness. This finding simply amplifies the one previously noted: that any change occurring on the post-reading test was most likely a chance change unrelated to syntactic maturity and writing effectiveness. It seems to be somewhat of an anomaly that there is a strong discriminant function defined by the quartile groupings on the reading pre-test, yet the quartile groupings on the reading post-test do not define the function even though there is no statistical change on the reading test. Presently there seems to be no logical explanation for this.

It was the quartile grouping on the pre-reading test in the experimental group that defined the single significant discriminant function. It may be concluded on the basis of the results of the pre-reading analysis that any growth in syntactic maturity and writing effectiveness as a function of traditional writing-class instruction occurs independently of general reading comprehension at the outset of instruction.

Alternatively, the single significant discriminant function suggests that initial reading comprehension moderated the change in syntactic maturity and in certain variables of writing effectiveness that accompanied the instruction in sentence combining. Specifically the better — but not the best — readers showed the greatest change in syntactic maturity and in those writing skills that are associated with "richness of detail." The poorer and the very best readers showed the greatest change in sentence-structure quality. Since the significant holistic growth of the sentence-combining group did not define the discriminant function, it occurred as a function of some variable other than

reading comprehension. Organization and coherence, the second non-discriminating variable, simply did not change in either the control or experimental group. These findings suggest that the collection of learned variables referred to as syntactic maturity manifest themselves in writing skills as richness of detail.

What can we say, then, about the logical relationship between reading comprehension and method of instruction? There is no evidence that instruction in sentence combining facilitates improvement in reading comprehension. There is, however, evidence in partial support of the alternative position — that level of reading comprehension facilitates prediction of the degree of success in sentence-combining instruction.

Still, since the present study looked at growth in writing effectiveness without looking at writing effectiveness itself, our conclusions must be limited. There is always the possibility that the better writers showed no growth — that they simply remained at a stable but superior level of writing effectiveness.

MULTIVARIATE ANALYSIS IN SENTENCE-COMBINING RESEARCH

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Among the latent skills and shaping concepts at work in the writing process are the value system and the belief structure of the writer. These assumptions about the world influence the writer's perception of it as well as what he makes of this perception. As the writer begins to give conscious shape to this experience, he activates the generative factors that writing teachers generally direct their attention to — the grammatical structure of the language itself, the active repertoire of sentence and paragraph patterns, and vocabulary. Although we help the student clarify the more deeply embedded structuring processes of his mind (the logical and temporal sequences that seem "natural" to him, and the values and beliefs that seem proper) our chief concern in a sentence-combining pedagogy is with these generative processes of syntactic and semantic structures. We believe, with Francis Christensen, that "solving the problem of *how to say* helps solve the problem of *what to say*" (1968:vi), and with Frank O'Hare that "knowing *how* does help create the *what*" of writing (1973: 72).

The effect of the "how" upon the "what" is at work not just in the students whose writing we study, but in ourselves as we study them. This fact has implications both for the researcher and for those evaluating research which impinges upon their teaching. As we look into the maturation process by which specific syntactic structures emerge in child and adult, or as we seek to evaluate the comparative effects of a curriculum based upon introducing sentence-combining materials, we can observe our efforts being shaped by our theories about these phenomena. And we can observe the effects — both upon our research designs and upon our interpretations of the results — of our own repertoire of theoretical and statistical concepts.

In the popular mind the computer is represented as a wondrous kind of drive-through; the data is "run through the computer," and truth emerges in great folded sheets from the other side. In fact, the computer is merely a wondrously quick and accurate perpetrator of the researcher's insights. And these perpetrations are only as fresh, subtle, complex — or true — as the researcher's theory and his statistical models allow. Within the past decade, language theory has gained a powerful ally in the perspectives opened up by the multivariate family of statistical procedures.

Before acquainting the reader with these procedures, I shall first indicate the limitations which simple, pre-computer statistical procedures place upon our interpretation of research data. I shall then describe in intuitive terms the five elegant and powerful multivariate techniques which have recently become accessible in consumer-oriented statistical packages. Further I shall illustrate some past uses of these techniques and suggest a few potentially useful applications in future research.

Some readers may find this discussion more useful to them if I start with some definitions of a few basic statistical concepts. We call a *variable* any measured attribute that can vary: temperature is a variable, as is race, and the ratio of words per clause. The *variance* of a group on a particular variable is a

measure of the total deviation of all individual scores from the group mean, squared to remove minus signs. This total we call the *sum of squares;* nearly all the statistical procedures currently used in language study are based upon this statistic. Most research in syntactic maturity and sentence combining has reported the reliability of their findings either with the *F* or the *T-statistic.* The T-statistic (alpha), when considered acceptable, i.e. significant, is typically reported as "less than .05," indicating a five in one hundred chance that the result reported is due merely to sampling error. When an analysis of variance table reports its *F*, we can determine how much risk we are taking that two or more groups being compared are, in fact, not even sampling the same population. *Analysis of variance* is the traditional pre-computer procedure for comparing the variances between several treatments, levels, or categories. Its results are easily displayed in tables which indicate that a significant relationship does or does not exist between groups on one or more measures. Alone, or in conjunction with analysis of variance, a *correlation coefficient* (R), a measure of the strength of a relationship is frequently reported; when squared (R^2), the correlation measures the amount of the variance being explained or predicated, hence reporting the validity of a result.

Because of serious limitations of analysis of variance, with its attendant T, *F*, or simple correlation statistics, researchers in the social sciences are turning more and more to the multivariate procedures described below. One such restriction is that, unless regression techniques are introduced into analysis of variance, it will not accept continuous variables. A *continuous variable* is one with a continuum of values, such as temperature, power consumption, or syntactic-maturity scores. A *categorical variable* is one that places things into categories, such as male-female, or high-medium-low. Analysis of variance requires that continuous variables be collapsed into levels, resulting in a loss of information. A two-way split of a variable such as ACT scores into high and low can result in losing a third of the information, since scores lying near the division line are rather arbitrarily assigned. Further, such collapsing of a continuum strays from the real world, which rarely registers such discrete leaps. A second limitation of traditional analysis of variance is that it may conceal or distort the actual statistical validity of the reported findings. Both weaknesses can be illustrated from a work with which most readers are familiar, Kellogg Hunt's 1970 monograph. The analysis of variance by which Hunt examined T-unit length shows a systematic growth by grade level from 4 through 12. The reliability of this inference is excellent; from the reported alpha of .01, we can be confident that there is only one chance in a hundred that Hunt's findings are the result of sampling error. Further, examining the sum of squares, we can calculate that he accounts for 51.4% of the variance (R^2) in the T-unit length of his students' writing. Fifty percent is a healthy figure in the social sciences. To understand half of a complex language phenomenon represented by the long T-unit is quite an accomplishment. The same table reveals the variance of the students on this variable when grouped by IQ scores into high, middle, and low groups. Again we observe a highly reliable alpha of .01. But when we calculate the R^2, we see that only 7% of the T-unit length variance at three levels is accounted for. The reliability of alpha tells us that we are onto something; but the derived validity coefficient tells us that the study leaves us ignorant of 93% of what is happening here. Since most studies in

reading and writing do not, at present, report the validity coefficient, the reader is encouraged to calculate it for himself from the reported t or *F* statistic. The equation for translating t to R^2 is (McNeil et al. 1975: 193):

$$R^2 = \frac{t^2}{df + t^2}$$

The validity of an *F* statistic reported in an analysis -of-variance table may be calculated as follows:

$$R^2_A = \frac{SS_A}{SS_T}$$

where A is the variable of interest, SS the reported sum of squares for that variable, and SS_T the total of the sum-of-squares column in the table as reported.

Research results reported as simple correlations can also mask weaknesses in research design or interpretation. Correlation indicates the strength of the relation between two variables, zero indicating no relationship, and 1.0 indicating perfect identity. But stated in isolation, the simple correlation between two variables is nearly always misleading. Consider, for example, that there is a high correlation between the number of firemen fighting a fire and the amount of damage. Obviously their relationship comes through a third variable, the fire. Or, consider that, by itself, soda water has a zero correlation with intoxication. Yet, when soda water is added to scotch, the variance explained is greater than the effect of either taken by itself.

This brings us to the first type of multivariate analysis, the cornerstone of all advanced statistical procedures, *multiple-regression analysis*.[1] Whereas simple correlation defines the association of two isolated variables, multiple regression seeks the optimal weighting (beta) of the members of a *set* of variables (called the predictor set, or the dependent variable, or X) and a variable called the criterion (or the dependent variable, or Y). Multiple regression pools the effects of all variables included in the model in order to explain the unique contribution of each to explaining the criterion, after the variance it shares with the other variables has been partialled out. Multiple regression, with its aim to produce maximum R^2, always accounts for the complex interrelationships within the data. It seeks the effect, taken together, or x_1, x_2, etc. upon Y. It allows that any time we get a hunch that some fact will help describe or explain something, we can simply add it to the equation and read directly its reliability, its validity, and how much new contribution is made to our understanding.

Multiple regression will do anything analysis of variance will do, without its attendant limitations. It can be used to predict or explain the distinction between two groups, represented by a single dichotomous variable. One might, for example, explain the relative contribution of each item of a set of analytic essay scoring variables in explaining perceived holistic-score differences between an experimental and a control group. Multiple regression can perform analysis of covariance, controlling for the effect of designated variables. It can, thus, answer directly the question, "Over and above any initial differ-

ences between the two groups, does the experimental group still come out higher on the criterion test?" Let me illustrate a use of multiple regression in a problem many schools face: the placement of entering students in appropriate tracks. At the University of Akron last year we gave a battery of tests to about 400 incoming freshmen to discover how well each test alone, and pooled with other tests, predicts student success. The tests included the ACT, the McGraw-Hill Reading Test, an essay, and the O'Donnell-Hunt syntactic-maturity test (the aluminum passage). My research and question was, "Over and above the predictive power of ACT and the students' high school grades, does a reading test, a diagnostic essay, or the syntactic-maturity test contribute to predicting student success in English Composition, as measured by final grades in the course?" The simple correlation between ACT English Usage and the course grade was .580; the correlation between high-school grades and the course grade was .485. In other words, ACT alone, or the high-school grade average alone, will predict only about 25 to 30% of the grades. Combining ACT and the high-school average in a regression analysis, I was able to predict 37% of the grades, almost exactly what previous studies had led me to expect. Now suppose I add the reading test. Six more percent of the grades were predicted. The essay test added another 4% (not as much as we had led ourselves to believe), a cumulative prediction of 47%. With all these variables in the equation, that is, controlling for them, I found no significant differences in race or sex, and no interactions. Nor did the syntactic-maturity test have any predictive power over and above the other tests; I expected this, since I was counting only words per T-unit, and all the evidence points to words per clause as a better predictor with older students. It is possible, however, that a valid, more comprehensive syntactic-maturity test would have added significantly to what could be predicted or explained about student success in a writing course.

An illustration in sentence-combining literature of the use of multiple regression is the 1977 study by Nold and Freedman. In their analysis of ratings of 88 papers written by Stanford freshmen, they sought to "isolate predictors of [readers'] response," the "subtle features to which readers respond when judging compositions." They conducted a stepwise regression of the holistic ratings against a set of predictor variables consisting of counts of seventeen linguistic features. They reported that, over and above (controlling for) the predictive power of five variables that accounted for 42.3% of the variance of the holistic scores, the syntactic-maturity scores made no significant contribution. They concluded that "words per T-unit and other standard developmental measures are not useful in predicting perception of quality on the college level."

A specialized application of multiple regression is made in *path analysis*, a procedure for examining the components of a complex criterion variable and their causal interrelationships. Path analysis uses a multiple-regression procedure first, to extract the weighting of each variable in predicting a criterion. Whereas multiple regression is a shotgun, all the variables in the predictor set affecting each other and the criterion, path analysis is a rifle, designating inexorable lines of influence, assumed to be causal. Path analysis does not discover causes, however; it is a tautological procedure for testing a theory about causal relationships. The reader is invited to see Robert Marzano's study

(1978) in which he challenges the theory that long sentences are built only through a process of reducing clause to phrase to one-word modifier. His analysis shows that more explained variance, hence more validity, lies in the model that describes reduction prior to embedding proceeding directly from clause to word in addition to the previously assumed path. Marzano recommends applying path analysis to testing the prevalent theory that, behind the clause, is the kernel sentence believed by some to be causing it all. He believes that such an analysis might empirically discredit the theory of deep structures.

A generalization of multiple regression is *canonical analysis.* Whereas regression explains, compares or predicts a single criterion variable, such as a course grade, canonical analysis can accommodate a *set* of criterion variables. In canonical analysis the best weighted composite of the predictor set is created that will predict the best weighted composite of the criterion set. For example, suppose one wishes to use a battery of diagnostic tests to predict not just the final grade but a composite score on a battery of final, or mastery, tests. Canonical analysis can do this. If one wishes to measure the validity of a new syntactic maturity test he has created, the test could be regressed against a set of student scores on a well-validated standardized test. But to validate several parts of a compound test, one could regress this set canonically on the validating set. To discover how to weight several mastery tests that one plans to use at the end of a unit, one can regress the set canonically against a set of standard tests, or against other mastery tests believed to be valid.

But suppose one has several groups — say, more than one kind of treatment plus a control group. Here a multivariate procedure called *discriminant analysis* is required. In discriminant analysis, as in canonical analysis, the variables of both the predictor and the criterion set are weighted — in this case, to explain or predict the difference, not the similarity, between two or more criterion groups maximally. As in multiple regression, a stepwise entrance of variables may be used to discover the unique new contribution made by each variable over and above the others already entered in discriminating between the members of the criterion set. An ingenious use of discriminant analysis was made by Richard Hofmann (see his article in this volume). Finding no linear relation between a set of analytic rating change scores (including syntactic-maturity scores) and reading scores, Hofmann postulated that separate quartiles of the reading scores might have different relationships to the several rating variables. By observing the loadings of these variables in discriminating between the reading quartiles, he was able to show which analytic scale variables were more apt to improve in each ability group as the result of a sentence-combining curriculum in a college composition class. Further, he was able, within the limits of his reading test, to predict the degree of success of each group in sentence-combining instruction.

The final type of multivariate analysis that I shall discuss is *factor analysis.* Unlike the other multivariate procedures, factor analysis does not relate the correlations between one set of variables to a criterion set. The researcher may wish to discover latent, underlying factors at work in a phenomenon, what might be called its deep structure. Thus an unmeasured construct might be posited that appears to be influencing a measured behavior. By such means were the traits of IQ derived through experimenting with dozens of tests of many kinds of ability, seeking the one latent factor that explains (or perhaps

causes) them all. One use of factor analysis in the study of writing was that employed by Paul B. Diederich (1974: 1-10), who, seeking to create empirically an analytic rating scale composed of the actual factors that readers look for in evaluating essays, submitted 300 student papers to sixty lay people and ten English teachers. Factor analysis enabled him to select out of all this multiplicity of views and comments five factors that recurred systematically and independently to explain nearly all the variance. Identifying each of these factors in terms of the variables which loaded most heavily on each, Diederich derived the items of his rating scale. Another use of factor analysis was made by Lester Golub (1973) when he developed his "syntactic-density scale." Golub began by selecting, on theoretical grounds, sixty-three linguistic features among which he wished to choose a small set, in order to regress them against teachers' holistic ratings of essays. He wanted, like Diederich, to derive a few factors that contained nearly all of the variance. The ten independent factors that he isolated were then submitted to canonical analysis to establish a scale of weights for determining the syntactic level of a piece of student writing.

Now in its second decade, the field of sentence combining is, I think, entering a new phase, of which the success of this Conference is an indication. We have established a clear developmental sequence in the child's and young adult's acquisition of syntactic maturity. We have established synopsis factors that appear to be reliable indices to the stages of this development. Sentence-combining teaching materials are gaining wider and wider use at all levels, including college.[2] I predict, further, that in the next few years we will learn a great deal about the relationship between reading skill and syntactic maturity, and that a valid, reliable, and easily administered test of syntactic maturity will be introduced.

The same decade that produced a body of research and a developed pedagogy of sentence combining has also witnessed the emergence of powerful statistical packages for the computer, with simple, non-mathematical handles, such as the *Statistical Package for the Social Sciences* (Nie et al. 1975).[3] As a result of this technological advancement, and of better research training in the graduate schools, the social sciences have been turning away from simple univariate and bivariate statistical procedures to the more sophisticated and powerful multivariate procedures described here. Actual manipulation of this analytical technology may involve the researcher in learning some keypunching, some job-control language and the basic logic of data definition. Many of us, with the encouragement of an academic-systems section of a campus computer center, have moved from being awed observers to being competent insiders in the computer center in less than a year. But whether the reader pursues his studies of sentence combining as a researcher or as a perceptive and critical reader of the research reported by others, a basic grasp both of the limitations of traditional methods of analysis and the usefulness state-of-the-art multivariate procedures will, I think, become increasingly valuable, and perhaps indispensible.

NOTES

[1]For further reading on multivariate analysis, I recommend starting with Lawlis and Chatfield 1944, followed by McNeil et al. 1975, or Kerlinger and Pedhazur 1973.

These are all well written, and intended for the reader who may have had little training in mathematics. A good introduction to multivariate procedures other than regression is Amick and Walberg 1975. Good suggestions for further reading are given by the individual contributors to the Amick and Walberg collection.

[2]Two new texts that combine open and directed sentence combining are Daiker, Kerek, and Morenberg 1979a, and Strong in press.

[3]This is a software package that can be implemented in most computer systems. It is well documented and supported, offers excellent diagnostics, and has an excellent user's manual.

DEVELOPING PARAGRAPH POWER THROUGH SENTENCE COMBINING

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Dr. Kellogg Hunt, distinguished keynote speaker at this writing conference, has established that the more skilled the writer, the longer are his clauses and his T-units, the latter term coined by Dr. Hunt to describe a single main clause with any subordinate elements that have been added to it. Inasmuch as the T-unit becomes longer as more subordinate constructions are embedded within a main clause or added to it, Hunt's research has revealed that it is the ability to subordinate ideas that distinguishes the superior writer. If we are to train our students to become superior writers, we must therefore show them how to add subordinate constructions to their main clauses. This is exactly what all sentence-combining programs are designed to do.

Since most students today have no conception, however, of what we mean by a main clause — let alone a subordinate construction — most sentence-combining programs take a purely linguistic approach to produce longer clauses and T-units. Though they successfully train students to use a variety of subordinate constructions as they combine two or more sentences into a single longer sentence, these programs make no effort to explain that students are subordinating the idea they express in a subordinate construction as they link it to an idea they are emphasizing. Such programs claim that students need not understand how their language works, that they need only to practice using it.

To demonstrate that students must understand how to subordinate non-supporting ideas if they are to write better paragraphs and essays with their longer clauses and T-units, we offer Paragraphs A and B below. In both we show main clauses underlined and T-units slashed. Paragraph A meets Hunt's normative figures for the average twelfth-grader in each of the three factors which Hunt found most significant in measuring syntactic maturity; its 14.6 T-unit length and its 1.69 subordination ratio are only slightly higher than Hunt found typical (14.4 and 1.68), and the 8.6 clause length corresponds exactly to Hunt's figure. The paragraph thus demonstrates the wide gap separating the typical twelfth-grader from the superior adult writer. In Paragraph B, a revision of Paragraph A, we find the clause length corresponding exactly to the 11.5 figure that Hunt found typical of professional writers; and in the revised paragraph we observe the skills which we must develop if we are to enable our students to become superior writers.

Paragraph A

(A) *Monsieur Loisel,* who was one of the chief characters in the short story "The Necklace" by Guy DeMaupassant, *was always very considerate of his wife.*/ (B) *Madame Loisel,* whose first name was Mathilde, *was a very beautiful lady;*/ but *she was also very vain.*/ (C) *Monsieur Loisel didn't make very much money,*/ and *he provided her with a servant to*

Paragraph B

(1) *Monsieur Loisel,* a chief character in DeMaupassant's short story "The Necklace," *was considerate of his* vain though beautiful *wife,* Mathilde./ (2) *He provided her with a servant to do the housework* even though his income was small./ (3) Aware of her yearning to mingle with the rich, *he went to considerable trouble on one occasion to obtain an invitation*

do the housework./ (D) *He knew that Mathilde wanted to mingle with the rich* because he went to a lot of trouble one time to get an invitation to an exclusive ball./ (E) *Then Mathilde complained that she didn't have anything appropriate to wear to a ball.*/ (F) *Monsieur Loisel had set aside four hundred francs to buy a rifle for himself.*/ (G) *He gave the money to Mathilde* so that she could buy a suitable gown for the ball./ (H) *Monsieur Loisel became very tired at the ball,*/ and *it lasted until four in the morning;*/ but *he did not tell Mathilde that she had to leave earlier.*/ (I) *She was enjoying a social triumph.*/ (J) *She was the belle of the ball,*/ but *he had to report to his office by ten in the morning,*/ so *he decided to nap in a side room for a couple of hours* because he didn't want to spoil Mathilde's social triumph./ (K) *Mathilde discovered that she had lost a necklace* when they arrived home from the ball./ (L) *It was a diamond necklace,*/ and *she had borrowed it to wear to the ball from a friend* who was very wealthy./ (M) *Monsieur Loisel did not fuss at her for losing the necklace.*/ (N) *Mathilde was very upset by the tragedy of her loss.*/ (O) *She sat slumped in a chair for hours* while Monsieur Loisel patiently retraced their steps to search for the diamond necklace that she had lost./ (P) But *he was not able to find the lost necklace* even though he went everywhere they had been./ (Q) So *now he had to work day and night for ten long years to pay for a replacement of the lost necklace.*/ (R) *Mathilde forced him to make this sacrifice* though he did not blame her once during the ten years for the sacrifice which she had forced him to make./ (S) *Mathilde's vanity proved to be very costly* even though Monsieur Loisel never did complain about it./

379 Words; 44 Clauses (26 Main, 18 Sub.)
Words/T-unit 14.6
Clauses/T-unit 1.69
Words/Clauses 8.6

to an exclusive ball./ (4) When she complained of having nothing in her wardrobe appropriate for the occasion, *he gave her four hundred francs,* which he had set aside for a gun, so that she could buy a suitable gown./ (5) Although the ball lasted until four in the morning and he had to report to work at ten, *he did not ask her to leave* when he became tired;/ (6) *he chose to nap in a side room for several hours rather than to spoil Mathilde's social triumph* as belle of the ball./ (7) When she discovered, upon arriving home, that she had lost a diamond necklace, borrowed for the evening from a wealthy friend, *he did not reprimand her for her carelessness.*/ (8) Instead, while she sat for hours slumped in a chair, stunned by the tragedy of her loss, *he patiently retraced their steps in a* futile *search for the lost treasure.*/ (9) Though he was then forced to work night and day for ten long years to pay for a replacement, *not once during this long period did he blame Mathilde for forcing this sacrifice upon him.*/ (10) Although her vanity proved costly, *Monsieur Loisel accepted the cost without complaint.*/

254 Words; 22 Clauses (10 Main, 12 Sub.)
Words/T-unit 25.4
Clauses/T-unit 2.2
Words/Clauses 11.5

Paragraph B achieves unity, coherence and emphasis by following the formula for a well-developed paragraph. The single point to be established is stated in the topic sentence, the first sentence in the paragraph. Every emphasized idea in every sentence following supports or restates that single point.

Though Paragraph A contains no grammatical or mechanical errors, it is a failure as a paragraph because it does not establish a single point. Even if we show the student the dignity lost by the use of numerous colloquial expressions, the force denied eight adjectives by the use of the adverb *very*, the coherence disturbed by the use of *and* in Sentence C to link contradictory ideas, and the logic destroyed by the reversal of cause and effect — and even if these flaws are corrected, it will still be a failure as a paragraph. Paragraph unity is repeatedly violated, not only by the inclusion of many sentences which make no mention of Monsieur Loisel, whose consideration of his wife is the single point which the paragraph is meant to establish, but by the failure to use main clauses for supporting points and subordinate constructions for non-supporting ideas. To observe that each idea stated in a main

clause is automatically emphasized and that each stated in a subordinate construction is introduced without emphasis, compare Sentence O in Paragraph A with Sentence 8 in the revised paragraph. Read aloud the underlined main clause in Sentence 0 and then Sentence 8 to note that the voice does not fall at the end of the subordinated idea, whereas it falls with emphasis at the end of the main clause. Note then that Sentence 0 would be an excellent sentence in a paragraph written to establish Mathilde's vanity, whereas Sentence 8 would violate the unity of that paragraph. It is not enough, therefore, to train our students to construct lengthy T-units. Sentence 0 is a single T-unit of twenty-five words, but it violates the unity of Paragraph B. The erroneous theory that students do not need to know how their language works, that they need only to practice using it, disregards two indisputable facts: the sole purpose of language is to communicate thought, and the sentence structure which we use has an undeniable effect upon the ideas which we are attempting to communicate. Students produce superior writing through lengthy T-units only when they know how to use sentence structure to emphasize their main points.

To turn the writer of Paragraph A into the writer of Paragraph B, we must show him how to use subordinate constructions to add subordinate ideas to his supporting points. We cannot ask him to omit the twenty-one ideas which he should not have emphasized or the four which he should not have subordinated, for his paragraph unity has not been destroyed by the inclusion of extraneous details unrelated to his point. The supporting details which he has failed to emphasize are essential to his point, and all of the ideas which he should not have emphasized are needed to clarify or strengthen a supporting point. As examples, read Sentences 7 and 9 of the revised paragraph to note that the underlined supporting points make no sense at all without the introductory clarifying ideas, and read Sentence 2 to observe a subordinate idea which adds strength to the supporting point to which it has been added. It is utterly impossible to write a coherent paragraph without including many subordinate ideas; and it is the inability to subordinate the many ideas that must be added for clarity that destroys the unity and force of most student paragraphs.

In order to train the student to show the most logical relationship between the subordinate and main ideas which he is joining, we must train him to construct subordinate clauses as well as non-clausal subordinate constructions. Though non-clausal constructions increase the words-per-clause ratio, the factor most significant in measuring syntactic maturity, there are logical relationships that can be shown only by the use of subordinate clauses. Reread Sentences 2, 5, 9 and 10 of Paragraph B to observe that the subordinate ideas in these four sentences could not be contrasted to the supporting points by any non-clausal construction and that failure to contrast these ideas would seriously weaken the coherence of the paragraph. It is impossible, moreover, to show a cause-and-result relationship by a non-clausal subordinate construction whenever the subjects of both the main and subordinate ideas are not one and the same. To note that we must use a subordinate clause to show any relationship when the subjects of the main and subordinate ideas are not the same reread Sentences 4, 7, and 8 in Paragraph B. Dangling modifiers result from the failure to understand that non-clausal constructions cannot be added to a main clause if the subjects are different. Thus a sentence-combining program

which fails to train the student to construct subordinate clauses is not preparing the student to write grammatical, coherent paragraphs.

Any sentence-combining program which produces longer clauses and T-units is training the student to subordinate ideas; and even though the student may not understand the role which subordination of ideas must play in clear and forceful paragraph development, we do not underestimate the gains which will be produced in conciseness, sentence variety, and writing style. The style of Paragraph A suffers — dies, perhaps — because the writer begins each of his twenty-six T-units with the main clause; though he uses eighteen subordinate clauses, he adds all of these to the end of a main clause. To observe that the voice plays a different tune as it reads subordinated ideas added to the beginning and the end of a sentence, reread Sentences 3 and 4 in Paragraph B, first as they are written and then reversing the ideas so that each sentence ends with the subordinated idea. The melody is gone. Because the voice automatically falls at the end of a sentence, a subordinate construction which ends a sentence receives as much emphasis as the main clause to which it has been added. Thus only a subordinate idea which strengthens the supporting point — like the one in Sentence 2 — should be added to the end of a main clause. To achieve a pleasing harmony of voice patterns, the writer must use a variety of sentence patterns with frequent introductory subordinate constructions. Because the writer of Paragraph A adds all of his subordinate clauses to the end of his main clauses, he creates a voice pattern which suggests the heavy, monotonous beat of a drum with no accompanying melody. He could vary the sentence structure in this paragraph by moving many of his subordinate clauses to the beginning of the sentence; but, unless he also corrects his faulty emphasis and subordination of ideas, the revised paragraph will be more pleasing only to the ear.

We can lead our students to please the most discriminating mind, as well as the ear, if we show them how to use their lengthier clauses and T-units to preserve the unity, coherence and force of their paragraphs. And we do not need to talk about any kind of clauses — or about compound or complex sentences — to turn the writer of Paragraph A into the writer of Paragraph B. We need to talk only about supporting ideas and non-supporting ideas and the four kinds of connectives which are the LINKS TO FORCEFUL WRITING. By talking only about connectives and the effect which they have upon the ideas which they link, we can train our students through sentence-combining exercises to construct a variety of sophisticated sentence patterns, skillfully punctuated, which will lengthen their T-units dramatically and improve the unity, coherence, and emphasis of their paragraphs as well as their writing style.*

Validation of the Links Sentence-Combining Program.

In order to discover whether this sequence of sentence-combining exercises will enable the student to write more effective paragraphs, we administered

*Here followed in the original presentation a lengthy excerpt of exercises and commentaries from Obenchain 1977. We regret that space limitations force us to omit this section of the paper. The remaining discussion is also given in a somewhat abbreviated form. Obenchain's materials are available from Validated Writing Systems, 2043 Durand Drive, Reston, Va. 22091. [Eds.]

the "Pre- and Posttest #1" below to ninth graders in Langley High School, McLean, Virginia, during the 1975-76 school year. The pretest was given on November 5, 1975, to fifty-three tenth-graders new to Langley and on February 2, 1976, to eight who entered at the end of the first semester. Before November 5, these tenth-graders had completed a word-skills program. Divided into two classes, they studied literature and composition on alternate days throughout the school year; while Group A was meeting with the writing instructor, Group B was meeting with an instructor who directed the study of literature. The posttest was given on April 8, 1976, students being allowed the same amount of time (50 minutes) that they had been given for the pretest which they had not seen or discussed in the interim.

Pre- and Posttest #1

Directions:

On a separate sheet of paper, write a PARAGRAPH consisting of EXACTLY SEVEN SENTENCES, each of which is constructed according to directions below:

A. Use the sentence numbered 1 below as the FIRST sentence of your paragraph, copying it exactly as it is written by omitting the number before it. INDENT this first sentence of your paragraph.

B. Do not begin each of the remaining sentences at the left margin of your paper as they are offered below, but present them in REGULAR PARAGRAPH FORM.

C. Construct sentences 2, 3, 4, 5, and 6 by COMBINING all sentences in each group into a SINGLE SENTENCE which emphasizes only those ideas which support the point of your paragraph. As you combine the statements within each group into a single sentence, use the same words except where it is necessary to supply a CONNECTIVE to link ideas logically or to substitute other words to achieve smooth sentence transition or to avoid awkward repetition of the same word or words. You will sometimes have to CHANGE THE ORDER of the ideas within a group in order to combine them LOGICALLY, but you MUST NOT OMIT ANY IDEA within a group. Sentence structure, punctuation, spelling, and FORCE will be strictly evaluated.

D. Construct your seventh sentence in accordance with directions below.

. . . . . .

1. Sue Saunders is an admirable young lady.
   (Reread Step A in directions above.)
2. Sue needs a quiet place for study.
   Sue's college schedule demands much preparation.
   Sue spends most of her free time in the library.
   In fact, Sue practically lives in the library.
   (Construct your SECOND sentence by combining the four sentences above. Reread Steps B and C in the directions.)
3. All of Sue's professors give heavy assignments.
   Sue always attempts to complete assignments.
   (Construct your THIRD sentence by combining the two sentences above. Reread Steps B and C in the directions.)

4. Sue discovered last semester that she was failing math.
   Sue passed the course with a B.
   Sue hired a tutor.
   Sue increased her study hours.
   (Construct your FOURTH sentence by combining the four sentences above. Reread Step C in the directions.)
5. Sue's cousin has dates every evening.
   Sue lives with her cousin.
   Sue dates only on week-ends.
   She refuses dates on week-ends when she needs to study.
   (Construct your FIFTH sentence by combining the four sentences above.)
6. Sue realized that a term paper would be late if she left campus last week-end.
   Sue declined the tempting invitation to visit the parents of a young man.
   Sue especially likes the young man.
   (Construct your SIXTH sentence by combining the three sentences above.)
7. For the SEVENTH and LAST sentence of your paragraph, write an effective CONCLUDING SENTENCE.

Table 1 shows the data gathered from a T-unit analysis of the sixty-one pre- and posttests. In computing the mean T-unit length of each paper, we did not count the topic sentences provided; we did, however, count the T-units in the concluding sentences the students supplied. We also recorded the number of errors in emphasis as well as serious errors in punctuation (comma splices, run-on sentences, and misused semicolons), failure to think ideas logically (*and* for *but*, etc.), the use of *so* for *therefore*, and errors in grammar and spelling.

TABLE 1

Comparison with Hunt's Normative Data of 61 Tenth-Grade Pre- and Posttests #1.

Normal T-Unit Length Determined by Hunt's Data		T-Unit Length of 61 students	T-Unit Length of 35 girls	T-Unit Length of 26 boys
Grade 4 ..... 8.6	PRE:	12.5	12.6	12.4
Grade 8 ..... 11.5	POST:	16.2	15.8	16.7
Grade 12 ..... 14.5				
Superior Adult 20.3	GAIN:	3.7	3.2	4.3

Hunt's data reveals that the lengthening of the T-unit is normally a slow process; there is a gain of 2.9 words between the fourth and eighth grades (from 8.6 to 11.5), another 2.9 words between the eighth and twelfth grades (11.5 to 14.5), and thus a gain of slightly less than three-quarters of a word during a single school year. Inasmuch as the 12.5 mean T-unit length of our tenth-grade pretests shows a gain of a full word over Hunt's normative figure for the average eighth-grader and we administered the pretest early in the school year, we find this pretest length in line with Hunt's normative figures.

Gain between pre- and posttest, however, far exceeded predicted growth. Note that the mean gain of all sixty-one students in T-unit length, 3.7 words

per T-unit, is five times greater than the predicted growth of three-quarters of a word per year. Within the five months between pre- and posttest, the program produced a normal five-year growth in syntactic maturity. Note that the twenty-six boys, whose pretest T-unit (12.4) was slightly lower than that of the girls (12.6), outdistanced the girls in the post-test, increasing their mean T-unit length by 4.3 words (from 12.4 to 16.7) and exceeding the T-unit length of the average twelfth-grader by 2.3 words. With this dramatic gain, they bridged more than half the gap that had separated them from the superior adult writer. With a lesser, though still impressive gain, the girls increased a typical tenth-grade T-unit length of 12.6 words to one considerably longer than that of the average twelfth-grader (15.8 compared to 14.4); they thus bridged more than two-fifths of the gap that had separated them from the superior adult writer.

In the pre- and posttests of one young man, T-unit length rose from 9.2 words in the pretest to 22.9 in the posttest, as long a T-unit as the test will allow. A more skillful writer will reduce some of the sentences. As evidence that the paragraph can be skillfully written with a mean T-unit length of 16 words, we offer the five supporting points below:

> Because her college preparation demands much preparation and she needs a quiet place for study, she spends most of her free time in the library;/ in fact, she practically lives there./ Though all of her professors give heavy assignments, she always attempts to complete them./ Having discovered last semester that she was failing math, she hired a tutor and increased her study hours;/ and she passed the course with a B./ Although she lives with her cousin, who dates every evening, Sue dates only on week-ends;/ moreover, she refuses dates even then if she needs to study./ Realizing that a term paper would be late if she left campus last week-end, she declined the tempting invitation to visit the parents of a young man whom she especially likes./ [128 words, 8 T-units, averaging 16 words]

Since the ideas given can be skillfully combined with a mean 16-word T-unit, it is possible that any student who has produced this average of words per T-unit may be capable of producing the 20.3 T-unit length which Hunt ascribes to the superior writer. Thirty-three students (54% of the 61) attained a mean T-unit length of sixteen or more words on the posttest, 51% of the girls and 58% of the boys.

Totalling the errors in emphasis in the two classes, we find that 316 errors in the pretest, an average of 5.2 per student, were reduced to 93 on the posttest, an average of 1.5 per student. These figures establish a newly-acquired understanding of subordination of ideas and account for the dramatic increase in T-unit length.

An understanding of connectives can reduce mechanical and grammatical errors as well as errors in logic. Failure to link ideas logically declined from 99 such errors in the pretest, an average of 1.6 per student, to 33, an average of .54 per student. Totalling the number of comma splices, run-ons, and misused semicolons, we found that 74 of these errors in the pretest, an average of 1.2

per student, were reduced to 18 on the post-test, an average of .2 per student. Though the decrease in grammatical errors from 38 to 27 may seen insignificant, we remind the reader that it is the coordination and subordination of ideas that *causes* serious grammatical errors and that we could therefore expect an increase in such errors with an increase in length of the T-unit. The decrease in mechanical and grammatical errors is as important to the development of syntactic maturity as the increase in clause or T-unit length; Hunt's superior adult writer does not make such errors.

In the fall of 1976, we administered Pretest #2 below to answer the question "How do you know that skills demonstrated in a sentence-combining test will appear in the student's original paragraphs?"

Pre- and Posttest #2

Read Stephen Leacock's short story "How We Kept Mother's Day," a copy of which has been given to you. Then write *a single paragraph* in which you establish the statement below:

In Leacock's short story "How We Kept Mother's Day," the members of Mother's family were selfish in their celebration of this holiday.

As you read the story, keep in mind that it is one of Mother's teen-age sons who is telling you what happened and that he cannot be expected to mention anything that he himself has failed to observe. The observant reader will note many points which the son has not noticed and will mention these in his paragraph.

Pretest #2 was administered to all tenth-graders new to Langley on September 3, 1976, the day after they had taken the sentence-combining Pretest #1. Though Posttest #1 was administered on January 25, 1977, when students had completed SENTENCE POWER, Part One of the LINKS TO FORCEFUL WRITING PROGRAM, Posttest #2 was not administered until June 2, 1976, when they had completed PARAGRAPH AND MULTI-PARAGRAPH POWER, Part Two of the LINKS program. A maximum of fifty minutes was allowed for each pre- and posttest, and students were allowed neither to see nor discuss either pretest until after they had taken the posttests.

Between the two posttests, students wrote many single-sentence answers in response to precise questions based upon literature and seven paragraphs, two of which were sentence-combining exercises and five of which — like Pretest #2 — were written in response to questions based upon literature; they also wrote three multi-paragraph papers, each establishing a given thesis by development of specified supporting points. After each paragraph or multi-paragraph writing performance, they were directed to note the skills demonstrated in a model paragraph or multi-paragraph paper written in response to the same assignment as well as to revise a student paper containing typical errors. Because of the writing directed between the two posttests, we concede that Post-test #2 can show us only the skill development we may expect to find if students are so directed.

Because the paragraphs in response to Posttest #2 were lengthy, some con-

taining more than three hundred words (girls wrote 46% more words in Posttest #2 than in their pretests, and boys 76% more words), we gathered only the data needed to discover whether there is a correlation between the two tests and an increase in the subordination ratio and clause length with an increase in the length of the T-unit. We thus decided to count only serious punctuation errors (comma splices, run-ons, and misused semicolons) and errors in grammar and spelling in both pre- and post-tests, to compute the mean T-unit length in both, and to count clauses per T-unit and words per clause in Pre- and Posttest #2, both of which factors are restricted by the sentence-combining Pretest #1. Because there were three classes of tenth-graders new to Langley and four papers to be examined for each student charted, we chose to analyze the four tests of the twenty-four students who comprised the smallest class. Though the class which we measured may have been the best as well as the smallest, we remind the reader that we are comparing them only with themselves and are asking only whether there *can* be a transfer to their own writing of the skills demonstrated in the Posttest #1. The data gathered and double-checked by this writer and a colleague are reported in Table 2:

TABLE 2
Comparison of 24 Tenth-grade Pre- and Posttests #1 with Pre- and Posttests #2

	WORDS/T-UNIT		CLAUSES/T-UNIT		WORDS/CLAUSE	
	Pre	Post	Pre	Post	Pre	Post
Test #1	12.7	15.9 Gain 3.2				
Test #2	14.1	18.6 Gain 4.5	1.57	1.84 Gain .27	8.93	9.49 Gain .56

	PUNCTUATION ERRORS		GRAMMATICAL ERRORS		SPELLING ERRORS/ 100 WORDS	
	Pre	Post	Pre	Post	Pre	Post
Test #1	40	23 (42% eliminated)	23	10 (57% eliminated)	1.42	.49 (64% eliminated)
Test #2	17	5 (71% eliminated)	19	11 (42% eliminated)	.93	.64 (31% eliminated)

These twenty-four students produced a mean T-unit length of 12.7 words on Pretest #1, a T-unit length in line with Hunt's normative figure for the average tenth-grader (12.9), whereas they produced a longer mean T-unit of 14.1 words on Pretest #2, a length approaching that of the average twelfth-grader (14.4). Thus the sentence-combining pretest had not allowed them to demonstrate their full potential. However, the fact that these students showed a greater increase in T-unit length in Posttest #2 than in Posttest #1 allows us to conclude that any increase predicted by Posttest #1 may indeed be reflected in the original writing of students who complete the full LINKS program. Note that the increase of 4.5 words in Posttest #2 is considerably greater than the increase of 3.2 words in Posttest #1. By adding 4.5 words to their original mean T-unit length of 14.1 words, these students produced a mean T-unit length of 18.6, thus — within a single school year — bridging 73% of the gap that had separated them on the pretest from Hunt's superior adult writer (20.3).

These students have likewise increased the number of clauses per T-unit and the number of words per clauses. Though the mean clause length of 8.93 words in Pretest #2 is slightly longer than Hunt's figures predict for the average twelfth-grader (8.6), the 1.57 ratio of clauses per T-unit in Pretest #2 is only slightly higher than Hunt's figures (1.42 in Grade 8 and 1.68 in Grade 12) predict for the average tenth-grader. By increasing the clause length then, in Posttest #2 to 9.49, these students have bridged 22% of the gap that had separated them in the pretest from the 11.5 clause length of Hunt's superior adult writer; and the 1.84 ratio of clauses per T-unit in Post-test #2 is slightly greater than the 1.74 ratio which Hunt found typical of the professional writer. To further increase the length of their clauses, the factor which Hunt found most significant in measuring syntactic maturity, our students need only to substitute non-clausal constructions for a few of the subordinate clauses which they have learned to construct.

Table 2 further shows that mechanical and grammatical errors were dramatically reduced in the post-tests of all twenty-four students. Note that 42% of the serious punctuation errors in Pretest #1 were eliminated in Posttest #1 and that a more significant 71% of those in Pretest #2 was eliminated in the second posttest. Note also that these students made 57% fewer grammatical errors in Posttest #1 and 42% fewer in the second posttest than they had made in the respective pretests. That they eliminated 65% of their spelling errors in Pretest #1 as they copied the words given them in the sentence-combining posttest and reduced spelling errors in posttest #2 from .93 to .64 per 100 words — this in spite of the highly increased verbiage earlier reported — confirms the respect for accuracy which these students have acquired.

Since we have earlier reported that the boys frequently surpassed the girls in our 1975-76 study of sixty-one tenth-graders in two classes — this in spite of weaker skills in the pretest — we must share a final observation drawn from our study of the twenty-four tenth-graders tested during the 1976-77 school year. Table 3 shows the mean T-unit length and the punctuation errors in the pre- and posttests of the fourteen girls and the ten boys in the class.

TABLE 3
Comparison of Pre- and Posttests #1 and #2 of the Tenth-grade Girls and Boys.

	MEAN T-UNIT LENGTH				PUNCTUATION ERRORS			
	Test #1		Test #2		Test #1		Test #2	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
14 Girls	12.5	15.6	14.2	18.2	23	14	13	4
	Gain: 3.1		Gain: 4.0		Eliminated 37%		Eliminated 69%	
10 Boys	12.9	16.2	14.0	19.1	17	9	4	1
	Gain: 3.3		Gain: 5.1		Eliminated 47%		Eliminated 75%	

Though the mean T-unit produced by the boys in Pretest #1 (12.9) was slightly longer than that of the girls (12.5), the difference was greater between their T-units in Posttest #1. Whereas the girls showed an increase of 3.1 words, to produce a mean T-unit of 15.6 words, the boys showed an increase of 3.3 words, producing a mean T-unit of 16.2. And though the boys had writ-

ten T-units in Pretest #2 (14.0) slightly shorter than those of the girls (14.2), once again they surpassed the girls in the Posttest #2; though the girls produced T-units averaging 18.2 words, thus bridging two-thirds of the gap that had separated them in the pretest from Hunt's professional writer, the boys had bridged four-fifths of that gap by producing T-units averaging 19.1 words. Further, the boys had eliminated a greater percentage of punctuation errors in both posttests, 47% as compared to 37% in Posttest #1 and 75% as compared with 69% in Post-test #2.

It may be the order which we can maintain, the strucutre which we can specify or the logic which we can clarify as we direct students to relate ideas logically and forcefully by the proper use of connectives that "turns on" the young men in this program. In any event, we have conclusive evidence that an understanding of connectives can produce highly improved writing skills in both boys and girls. Through sentence-combining exercises, we have improved the thinking of our students; and through the sophisticated sentence-combining exercises which require students to combine an idea in the question with one found in the reading assignment, we may also have improved their reading skills. The logical thinking which we can develop as we train our students to show the exact relationship between the ideas which they are linking should result in improved reading *and* writing, for both are thinking made visible.

SENTENCE EXPANDING: NOT CAN, OR HOW, BUT WHEN

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Sentence expanding or, as it is commonly called, sentence combining has been both theoretically and empirically explored by several researchers interested in more effective ways to teach composition. When the seminal work of Hunt led us to assume that we could measure syntactic maturity by counting components in a T-unit measure, Mellon, O'Hare, and others posed the practical research question, "Can we teach sentence expanding?" Their research and that of the Miami University program have encouraged us to believe sentence combining can significantly improve a student's quality of writing.

And yet despite this hope and encouragement, we must admit to two reservations. One is whether the T-unit count reliably measures writing skill and maturity. The other reservation is whether the combining exercises we have reviewed (O'Hare 1973, Strong 1973), most of which deal with limited modes of discourse (narration, description, and some classification) would help a student generate the more sophisticated cause and effect relationships required of more sophisticated argument. Our reservations were reinforced not only by the limited modes that sentence combining practiced but also by our personal conviction that a teaching model need not replicate a learning model based on self-discovery. It might be more profitable for a teacher to provide a structure for a student to imitate than to lead a student to discover and generate appropriate structures on his own.

We assumed that in teaching persuasive discourse, we might construct a better teaching model, composed of two steps:

1. The teacher presents a student with an appropriately labelled structure, and then leads the student to imitate that structure, using information from the student's own experience which fits that structure.

2. The student then writes compositions in which he uses that model structure as he presents content from his own experience.

To answer this research question, how might we most profitably teach sentence expansion, we created materials that would contrast combining and imitation, using the following formats.

Illustration I

Example of a sentence-combining unit:

1.1.a. Most cities suffer from unsafe levels of air pollution 1R. — R = relative clause
1R. Air pollution is largely caused by automobile emissions.

1.1.b. 1A , then the efficiency of the internal combustion engine must be improved. — A = adverbial clause
1A. CONDITION: Our air is to be made safe to breathe. — Condition = if

1.1.c. But 1A, it is unlikely we will see such improvements very soon.
1A. CAUSE: Such an improvement is both expensive and technically difficult. — Cause = because

Example of a parallel-sentence-imitation unit:

1.1. Most cities suffer from unsafe levels of air pollution that is caused largely by automobile emissions. If our air is to be made safe to breathe, then the efficiency of the internal combustion engine must be improved. But because such an improvement is both expensive and technically difficult, it is unlikely that we will see such improvements very soon.

1.1.a. Most cities suffer from unsafe levels of air pollution
R-that is caused largely by automobile emissions
_____
R_____ _____.

1.1.b. THEN the efficiency of the internal combustion . . .
IF our air is to be made safe to breathe,
THEN_____
IF _____,

1.1.c. BUT it is unlikely that we will see . . .
BECAUSE such an improvement is both . . . difficult,
BUT _____
BECAUSE_____,

Suggested subjects: gun control, desegregation of schools, censorship of pornography.

These exercises illustrate the difference between sentence combining and sentence imitation. In one, the students embed various kernels expressing preformulated information. In the other, the student is presented with a structure already mapped and labelled for him, which he then imitates, creating his own substance. The primary difference is in the student's application of self-generated content to model structures. The imitation exercises closely follow the teaching steps described in (1) and (2) above.

We selected as our experimental and control groups high-school sophomores from the Chicago area. One group consisted of six sophomore classes at Morgan Park High School in Chicago,[1] three receiving instruction in sentence combining, and three receiving instruction in sentence imitation. A program currently in operation there, Time to Write, funded by ESEA Title IVc, leads the students to use various rhetorical modes through the two teaching steps described earlier. In the freshman year, the students write narration, description, classification, and single and double comparison/contrast. In the sophomore year, they again use prewriting exercises and imitation models to generate persuasive modes of rhetoric: proposition/support, definition/example, cause/effect, and problem/solution.

One text, *Mapping the Model* (Hake 1977), is used in all classes. There are six writing units of three weeks for a total of eighteen weeks instruction in the thirty-six week year. In the three-week unit, students spend approximately two weeks on each rhetorical mode and one week on the style exercises: Unit I, Subordination; Unit II, Coordination; Unit III, Free Modifiers; Unit IV, Subordination and Coordination; Unit V, Subordination and Free Modifiers; Unit VI, Subordination, Coordination and Free Modifiers.

Because the Chicago students were stratified into essential, regular and honors classes, the style units were limited for each class; i.e., essential: Units I and II; regular: Units I-IV; and honors: Units I-VI.

Another experimental group consisted of four classes, two imitation and two combining, at Carl Sandburg High School in a south suburb of Chicago.[2] These students were heterogeneously grouped in a one-semester writing program. The program teaches exposition, but no central program is set for each class. Each teacher developed his/her own syllabus and chose his/her own textbook. Two teachers covered individual rhetorical modes while the others operated with one basic essay outline and repeated that for each assignment. These classes covered all six units and spent a week on each unit in their sixteen-week semester.

The control groups were both heterogeneous, one from another Chicago high school, Hubbard High School, the other from another south suburban school, Bloom High School. The former followed the city's sophomore writing curriculum; the latter its school's semester expository program.

The initial student population in our study numbered 244. Thirty-two students did not remain in the assigned classes, so the reported data included the writing performance of 212 students.

The results of the program supported our first reservation. The answer to the question "Does a simple T-unit count accurately measure writing skill?" seems to be No. We found that students who on a pretest essay wrote papers judged to be incompetent wrote significantly[3] longer T-units than students who wrote essays judged to be competent.[4]

Table One: Pretest Data

	145 Incompetent Essays	99 Competent Essays	Difference
Words/T-unit	15.60	11.86	+3.74
Clauses/T-unit	1.91	1.68	+ .23
Words/Clause	8.17	7.05	+1.12

The judgment of competent or incompetent was based on a pretest essay evaluated by means of a testing instrument used to report curricular progress in the government-funded project.

In both pre- and posttests, the tenth grade students were asked to write for 50 minutes on one of the following questions:

> Should *[name of school]* have a student smoking lounge?
> Should the legal drinking age in Illinois be raised to 21?
> Should study halls be dropped from a student's program?
> Should students be compelled to wear ID cards?

To evaluate an essay's competence, a grader observed flaws in each of four dimensions of an essay.[3] The dimensions addressed were these:

DIMENSION I: ORGANIZATION

The essay is flawed because

1. it has no introduction (3 flaws)
2. it has a faulty introduction (e.g. no stated or implied central idea, does not place the central idea in an overall context, does not imply how the central idea is to be developed (2 flaws)
3. it has no body (5 flaws)
4. it has a faulty body which does not develop the central idea (2 flaws)
5. it is not well organized (2 flaws)
6. it needs a conclusion and does not have one (2 flaws)
7. it does not include sufficient detail (1 flaw)
8. it has a faulty conclusion (e.g. does not restate the central idea, has information irrelevant or contradictory to the introduction and/or body (1 flaw) .

DIMENSION II: COHERENCE

The essay's coherence is flawed because:

1. the title is omitted or inappropriate
2. a new paragraph should/should not begin
3. a necessary paragraph is omitted from the essay
4. a faulty paragraph is included in the essay, (i.e. incorrect, illogical, inconsistent, irrelevant, misplaced, redundant, repetitious, or unclear)
5. a necessary sentence is omitted from the paragraph
6. a faulty sentence is included in the paragraph
7. a necessary element (word or word grouping) is omitted from the sentence
8. a faulty element is included in the sentence
9. there is a sentence fragment
10. there is a run-on sentence or comma splice

DIMENSION III: USAGE

The essay's usage flaws are in

1. verb usage
   a. an improper subject-verb agreement
   b. a verb phrase omitting a verb
   c. an incorrect verb ending or verb form
   d. an inconsistent tense, mood, or voice

2. pronoun usage
   a. no antecedent for a pronoun
   b. pronoun not agreeing with its antecedent
   c. pronoun in incorrect case form
3. noun usage
   a. incorrect plural form
   b. no plural form
   c. incorrect possessive form
   d. no possessive form
4. adjective usage
   a. incorrect comparative or superlative form
   b. no comparative or superlative
   c. adjective instead of adverb or vice versa
5. misspelled words
6. misused words

DIMENSION IV: PUNCTUATION

An error has been made by the omission or incorrect usage of the following:

1. capital letters
2. period (unless the period creates a sentence fragment marked in dimension II)
3. question mark
4. exclamation point
5. comma (unless the comma creates a comma splice marked in dimension II)
6. colon
7. semicolon (unless the semicolon creates a fragment marked in dimension II)
8. quotation marks
9. dash
10. underlining
11. hyphen
12. parentheses
13. apostrophe

The consensus judgment of competent was 3 flaws in dimension one and a total of 18 flaws in dimensions two, three, and four.

When we contrasted our posttest data with our pretest data, we found another significant difference:

Table Two: Pre-Post Data

	Pretest essay	Posttest essay	difference
	Incompetent stayed incompetent (37 students)		
W/T-unit	15.51	16.45	+.94
C/T-unit	1.83	1.87	+.04
W/Clause	8.47	8.79	+.32
	Incompetent became competent (76 students)		
W/T-unit	15.69	13.01	−2.68
C/T-unit	1.99	1.59	− .40
W/clause	7.88	8.27	+ .39
	Competent stayed competent (99 students)		
W/T-unit	11.86	15.56	+3.70
C/T-unit	1.68	1.82	+ .14
W/Clause	7.05	8.54	+1.49

Students whose pre- and posttest essays were judged competent significantly increased their word/T-unit and word/clause counts, but not their clause/T-unit counts.

Students whose pre- *and* posttest essays were judged incompetent did not significantly change their T-unit counts, counts that still remained higher than the essays judged competent.

But most important were the counts of the students whose pretest essays were judged incompetent but whose posttest essays were judged to be competent. They had significantly decreased their word/T-unit and clause/T-unit counts.

It was at this point that the issues became more fundamental than simply the relative effectiveness of combining and imitation exercises. The different responses to these expansion exercises by students at different levels of competency suggest that the exercises' usefulness may vary according to the abilities of a student. We therefore began to ask a different question: not just how sentence combining should be taught, but when. One answer suggested by the above data seems to be only when a student is ready for it, only when he is already a competent writer or ready to become one.

A further analysis of our information did not answer our new question, but it did lead us to study the data from a wider perspective.

Table Three: Stratified Pre-Post Data

	IMITATION (87 students)			COMBINATION (89 students)			CONTROL (36 students)		
	pre	post	dif	pre	post	dif	pre	post	dif
	INCOMPETENT ► INCOMPETENT								
W/T-unit	15.40	16.81	+ .91	14.92	17.11	+2.19	15.71	15.43	-1.28
C/T-unit	1.83	1.88	+ .05	1.81	1.88	+ .07	1.85	1.85	0
W/Clause	8.68	8.44	+ .26	8.24	9.10	+ .86	8.49	8.34	- .15
	INCOMPETENT ► COMPETENT								
W/T-unit	15.71	12.10	-3.61	15.72	12.34	-3.38	15.64	14.59	-1.05
C/T-unit	2.03	1.60	- .43	2.04	1.54	- .60	1.90	1.63	- .27
W/Clause	7.73	7.87	+ .14	7.70	8.01	+ .31	8.23	8.95	+ .72
	COMPETENT ► COMPETENT								
W/T-unit	11.84	17.01	+5.17	11.87	16.02	+4.15	11.87	13.65	+1.78
C/T-unit	1.70	1.83	+ .13	1.64	1.81	+ .17	1.70	1.82	+ .12
W/Clause	6.96	9.29	+2.33	7.23	8.85	+1.62	6.98	7.50	+ .52

These results reveal the following:

(1) Among those who practiced sentence combining, those who began Incompetent and remained Incompetent significantly *increased* the length of their T-unit counts.
(2) Among both combiners and imitators, those who began Incompetent and became Competent significantly *decreased* the length of their T-unit counts.
(3) Among both combiners and imitators, those who began Competent and remained Competent significantly *increased* their T-unit counts.

All this suggests the following:

(1) Sentence combining may increase the already inflated word counts of the incompetent student.
(2) Sentence combining or imitating may deflate the inflated prose of the student able to become competent.
(3) Both sentence combiners and sentence imitators may significantly increase their T-unit counts in a controlled way *if they are competent to begin with.*

These findings, however, did not answer our initial research question. The differences between the competent student and the incompetent student who became competent led us to speculate that perhaps sentence expansion — either by imitation of combining — should not be considered a paradigm for teaching composition in itself, but rather a method which must constitute part of a larger paradigm. But what paradigm?

Our research turned at this point from pure empirical research to investigative research that required a more detailed stylistic and rhetorical analysis of the essays. This analysis suggested a crucial difference between the papers of the imitators and combiners whose posttest essays were judged competent. The imitation papers included more constructions signalled by the logical connectors such as *but, yet, because, since,* and *although.* A casual inspection of them suggested they seemed to be more logically sophisticated than the combiners. And they seemed to have something more than longer sentences. But what?

Our search for a theoretical basis on which to explain these observations paralleled our search for a paradigm into which we might fit the matter of sentence expansion and its variations. It may be that increasing the length of sentences is done in two different ways that call on two different cognitive processes: sentence expansion and sentence elaboration. These are terms that Dan Slobin (1971) applied to the early research into the acquisition of language by children, much of it first done by Brown, Bellugi, and Cazden:

Expansion: adding information to a construct that does not change the relationships among the components in the construct nor essentially change the meaning of that construct.

Elaboration: adding information to a construct that may change the relationships of the components in the construct or the meaning of the construct.

Using these concepts as the first steps toward a theoretical paradigm, we might assume that teaching sentence expansion would be possible within more constrained modes of discourse — discourse such as narration, description, and classification. These are modes of discourse developed mostly by illustration, by adding descriptive details to a fixed larger framework whose structure is essentially taken from a scene that, at least in some form, pre-exists in any sentence that describes it.

A series of kernel sentences that describes the components of a scene or even constitutes the frame and the details that would expand on that frame. Thus combining these kernel details expands the framework into a fully fleshed-out description but does not essentially change the facts.

But discourses that are more expository, that depend more on logical relationships do not consist of a frame and details in the same way. Discourses that depend on proposition/support, cause/effect, or problem/solution must be developed not only by illustration but by explanations that impose logical, not descriptive relationships on the "kernels." When details are added, they may change the focus of a sentence through subordination and logical relationships, and thereby change the meaning of the set of kernel sentences in ways far more profound than the meaning of a set of descriptive or narrative kernel sentences.

We decided that the imitation of these logical relationships should better serve the needs of teaching this more sophisticated type of discourse. If a student can be led to apply a variety of logical relationships to components of his own experience in a carefully controlled sequence of imitations, from less to more complex, then when he or she must write essays that constitute evidence of rhetorical and stylistic progress, that practice will carry over into that self-generated kind of writing.

To investigate this possibility further, we analyzed the data from those whose pre- and posttest essays were judged competent. We assumed that it would be in this data that we would find evidence of the most mature use of these logically based syntactic and rhetorical structures. Unfortunately, we found no significant differences.

But we also knew that an evaluation instrument not only controls how one illustrates and explains "facts" but even defines and limits the "facts" that an observer can perceive. As a consequence, we constructed a more finely structured observational framework,[4] one that would allow us to more delicately distinguish functional components.

When we applied this more finely calibrated instrument to the data, we in fact located differences that turned out to be significant (see footnote 5): more reduced flaw counts in particular rhetorical components among the imitators as opposed to the combiners.

The new observation framework included these new functioning dimensions with new details:

DIMENSION TWO: MEANING AND LOGIC

The essay's meaning or logic is faulty when

20. necessary information is omitted
21. unnecessary information is included
22. information is unnecessarily repeated

23. logical transitions or connections between pieces of evidence are omitted
24. illogical transitions or connections between pieces of evidence are included
25. a conclusion, drawn from the presented evidence, is incorrect
26. a paragraph should or should not begin
27. a paragraph includes (a) misplaced sentence(s)
28. a paragraph includes more than one central or unifying idea
29. a paragraph omits a central or unifying idea

DIMENSION THREE: STYLE

The essay's style is faulty when

30. too many short sentences appear
31. a sentence is too long or rambling or wordy
32. a sentence is confused or unclear
33. a sentence is too complex
34. a sentence includes misplaced parts
35. a sentence is inappropriately in the active voice
36. a sentence is inappropriately in the passive voice
37. a sentence is too direct or blunt
38. a sentence is too indirect or impersonal
39. a sentence includes a wrong or misused word

DIMENSION FOUR: MECHANICS, PUNCTUATION, AND USAGE

The essay's flaws include

40. sentence usage
    a. run-on sentence
    b. sentence fragment
41. verb usage
    a. improper subject/verb agreement
    b. verb phrase omitting a verb form
    c. incorrect verb ending or verb form
    d. an inconsistent tense
42. pronoun usage
    a. no antecedent for a pronoun
    b. pronoun not agreeing with its antecedent
    c. pronoun in incorrect case form
43. noun usage
    a. incorrect plural form
    b. no plural form
    c. incorrect possessive form
    d. no possessive form
44. adjective usage
    a. incorrect comparative or superlative form
    b. no comparative or superlative form
45. spelling

46. capital letter
47. period
48. comma
49. semi-colon
50. colon
51. apostrophe
52. quotation mark
53. parentheses
54. dash
55. hyphen
56. underlining
57. question mark
58. exclamation mark

The new observational framework provided the following data:

Table Four: Observation Framework II Data

	pre	post	difference
Imitation (38 students)			
d1	3	1	−2
d2	9	5	−4
d3	9	4	−5
d4	6	8	+2
E2+3+4	24	17	−7
Combination (41 students)			
d1	3	1	−2
d2	9	8	−1
d3	9	8	−1
d4	4	4	0
E2+3+4	22	20	−2
Control (20 students)			
d1	3	1	−2
d2	9	9	0
d3	8	7	−1
d4	6	5	−1
E2+3+4	23	21	−2

The imitation and combining groups differed significantly on the dimensions of logic and style.' In these dimensions, the imitation students significantly *decreased* their flaw count.

Can we therefore conclude that for mastering discourse that is more expository than narrative/descriptive, imitation exercises serve better than combining exercises? It would appear that the answer might be yes.

We may not have adequately answered our initial questions. But we have succeeded in posing new and perhaps more interesting and serious questions, questions that may open new avenues for research. One such avenue may be the manner in which we address the qualities of prose as measured by T-unit complexity. Are some sentences more accurately described as expansion than

elaboration, and therefore require one rather than another measure of complexity?

A second question is whether we should recount any of the studies that, for whatever reasons, deleted fragments from their counts (see footnote 4). Next, we might project a study of the studies, a review of the writing samples of the many sentence-combining studies. This review could check their internal validity by contrasting narration and description contents with exposition and argumentative contents and by contrasting the pre- and posttest T-unit counts of the competent students who remain competent and the incompetent students who stay incompetent. The review could also check external validity by asking for a variety of judgments from people not involved in the project, even, perhaps, from those not teaching, but consuming writing. These judgments could range from holistic ratings and rankings, through criterion references, to specific observations — as a matter of fact, judgments in whatever terms the judge may propose.

Finally, we might construct not a course in sentence expansion or elaboration but a curriculum to check our teaching strategies within a paradigm. We might envisage that Writing I for the entering student should be organized to accomplish the following goal: to be able to write a coherent, organized simple essay developed by illustration. To this end, we could use sentence-combining exercises. The rhetorical modes that are limited enough to allow the student to expand and control his discourse are narration, description, classification, process, and single and double comparison contrast. These modes allow the student to illustrate past and/or present situations. Because the student can control the discourse, he can develop his syntactic fluency through sentence-combining exercises, exercises that lend themselves to illustration and illustrative detail.

The goals for Writing 2 should build on Writing 1 goals: to write a coherent organized expository essay developed by explanation. In Writing 2, the student must not only be able to illustrate a past or present situation but explain those situations in terms of their cause and effect relationships. The student may even have to move to hypotheses and speculations about the future. (However, it is better at this point to limit the student's explanation to past and present situations that exist in enough detail, in his memory or in his perception, to guide him in creating syntactic and logical relationships in his prose.) The rhetorical modes that move the student to more persuasive discourse are proposition/support, definition/example, cause/effect, and problem/solution.

In either of these courses, particular usage problems may be addressed; however, usage problems are better dealt with in individual tutoring sessions. For this reason, it is critical that a tutoring service be available for the first- and second-term students. Students in Writing 1 should control their discourse in the more limited rhetorical modes so that they do not have usage problems or only those usage problems that can be addressed in tutoring drills.

When students move on to Writing 2 and deal with more persuasive and expository modes of discourse, they often lose control over their usage. In some cases, they write prose that is exceedingly simple and "safe" so that they can control their usage. But others who attempt to write the more complex prose demanded of them at this level of instruction frequently backslide into

the kind of usage problems that they had overcome in more limited modes. Teachers should be aware of this problem and insure that their students receive carefully structured sequences of rhetorical modes and carefully monitored tutorial assistance to deal with recurrent problems of usage.

Writing 3 should lead the student to elaborate his discourse. In this course the student should not only illustrate a present problem or situation and explain a past cause, but argue a future or hypothetical solution or course of action. This requires more than expansion of the discourse but its elaboration as well, the creation of sentences whose logical and cognitive models are entirely within the mind of the writer. For this kind of elaboration, we propose the use of carefully structured imitation exercises to help the student elaborate his discourse. The exercises would lay out varieties of logical relationships among elements, using content familiar to the student. The imitations would require the student to look into his own experience for subject matter similar to or parallel to the original content of the original model. Then using that model, the student would structure his own knowledge along the lines of the model. Thus imitation becomes an intermediate step that carries the student from structuring someone else's content along generally constrained syntactic structures to the more demanding kind of self-generated writing that every writing course expects its students to master: to write a coherent expository or argumentative essay developed by analysis and synthesis.

Research in each of these areas would not eliminate sentence combining but would protect it from the familiar danger that often threatens a new technique when it turns out not to be the universal panacea everyone is seeking — its blanket rejection in favor of more familiar modes of teaching.

But another value of the pursuits we propose is that they might provide another way to explore the matter of cognitive development among the age-group we typically teach. We believe that exercises of the kind described here can be tailored to the level of development that a student may have reached. Assuming that we can identify those levels, we may find that we can teach composition more effectively if we ensure that the student is engaging in activities that will benefit him the most during his progress toward competency.

NOTES

[1] Morgan Park classes were taught by Jeanne Akermann, John Haley, James Kelley, Pamela Pankey, Roberta Rehfeldt, and Arlene Whalen.

[2] Carl Sandburg classes were taught by Ruth Bardwick, Lois Hull, Sally Quinn, and Richard Rose.

[3] A difference at the .05 α^2 level of significance for this study was: words/T-unit: 2.00; clauses/T-unit: .25; words/clause: 1.00.

[4] Unlike some others who have excluded sentence fragments from their T-unit analyses, we chose to include them. We simply combined every fragment with whatever sentence it logically connected to and counted it as part of that sentence. We did this for three reasons.

First, the putative basis of the T-unit is a minimal *terminable* unit, a unit that is in fact based on a sense of cognitive closure at the end of a main clause and its modifiers. Since the accidents of punctuation are systematically ignored in isolating multiple T-units within single orthographic sentences, it would appear at least odd not to apply

the same standard to a single T-unit spread across multiple orthographic sentences. For many students, a period is simply a mark that they have stopped to think for a moment before going on. On another occasion, a student as he paused might jot down a comma or nothing. Periods do not always reflect cognitive units.

Second, it seems odder still to exclude fragments from an objective T-unit count but to compare the results of such counts to holistic and trait judgments based on papers that *included* those fragments. It would be self-evidently foolish to cross out fragments before the papers were given to a reader for his judgment. Any reader can quite easily integrate most fragments into the stream of discourse. Indeed, the discourse might seem incoherent if such fragments were arbitrarily deleted. Perhaps some special count is appropriate in this matter. But ultimately, it is contradictory to compare counts based on texts whose fragments have been edited out with judgmental counts based on texts whose fragments have been left in.

And finally, there is the thornier matter of what constitutes an illegitimate fragment. Surely, at this stage of our understanding, we have to acknowledge that some fragments are legitimate. But since distinguishing between legitimate and illegitimate fragments would require a sense of stylistic judgment that massive counts cannot afford, we cannot practically pre-edit texts to make those distinctions. (And under any circumstances, the data cleansed of fragments revealed insignificant changes in the T-unit analysis.)

[5] A step aimed at strengthening the collective judgment of the graders and increasing the reliability of the final results involves an adjustment of the recorded scores themselves. To insure maximum uniformity, we use the computer and a statistical formula to "calibrate" ourselves as graders. That is, a certain number of flaws, determined by the formula, are added to the scores recorded by reader A, who stands low on a group scale of severity/leniency, and a certain number subtracted for reader B, who stands high on that scale. This process, built from the Rasch mathematical model, makes possible the transformation of our observations into measurement units and the translation of these units into an evaluation. Additional references in the evaluation/measurement procedure are Andrich and Hake 1974, and Hake and Green 1977.

[6] Observation framework created for the U.S. Department of Agriculture, October, 1977.

[7] A difference at the .05α^2 level of significance for this study was: -2 in dimension one; -3 in any one functioning dimension, i.e., two, three, and four; -4 in the sum of two, three, and four.

PART III SENTENCE COMBINING IN THE CLASSROOM

ANYBODY CAN TEACH ENGLISH

Kellogg W. Hunt
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It was in the depth of the depression almost half a century ago that I heard of a job vacancy in the high school at Goose Lake, Iowa. When I got to the principal, I found that he wasn't really sure he would need another teacher of English. He already had one full-time English teacher, and then the Latin teacher could take one class, and the coach another one, and if he still turned up short, he could use the History teacher. Anybody can teach English.

That phrase, expanded, means, "Anybody can teach English as well as someone trained to teach English." That phrase has haunted me all my professional life. There is too much truth in it for comfort. I don't believe that the phrase is true for the teacher of literature: students who want to enjoy poetry and fiction will learn such enjoyment from their literature teacher better than from their History teacher or their Latin teacher — and certainly from their coach. But the teaching of writing is another matter.

When I applied for the job at Goose Lake, what were my qualifications? I was a B.A. in English, newly minted, and I had read a lot of good books. I'd read Chaucer, feeling greatly emancipated in a world that treated even the dirty stories as works of art. I knew all about Milton's warnings against uxoriousness. I reveled in the vast power of Marlowe and Shakespeare. In brief, I had been richly marinated in the best that had been thought and said in the world.

Was I better qualified to teach literature than my friends in Latin and History? Oh, yes, I think so.

Now what were my special qualifications to teach writing? Well, I had taken a course in writing. Yes, but so had my friends in Latin and History; the course was required of everyone. I'd taken a course in the History of Education. But so had they. I'd taken a course in tests and measurements, and in educational psychology. So had they. Those were my qualifications to teach writing. Anybody could teach writing as well as I.

Though I failed to get a job teaching in high school, I got a fellowship at a big university, and one semester later I was teaching writing there. My new qualification for the job was that I was doing well in my literature classes. I had complete autonomy in my new classroom, and I don't remember that anyone ever dropped in on a class, though I believe I was once asked to show someone a batch of themes after I had marked and graded them. I was especially careful about that batch, and they were returned to me with approval.

A motherly lady in charge of freshman English was always glad to advise us new assistants and to encourage us if we needed help. I may have spent as much as ten hours in those conferences — about as much time as I spent on one day's preparation for my other classes.

That ten hours was the sum total of my specific training to teach writing in the course of a B.A., an M.A., and a Ph.D. in English. In eight years, or ten, figuring forty hours a week for forty weeks a year I must have spent more than ten thousand hours studying literature and what was called language or philology. My ten hours instruction in how to teach writing amounted to

about one-tenth of one percent of my total time. That small a dosage was deemed non-carcinogenic. Except for that ten hours, I stand before you like other English professors, either untaught or self-taught despite my years of schooling.

What was taught to me as the English language consisted of separate courses in Anglo-Saxon grammar, Anglo-Saxon prose, Anglo-Saxon poetry, Middle English, Chaucer exclusive of the *Canterbury Tales*, Chaucer's *Canterbury Tales*, Middle English dialects, *Beowulf*. I was not required to take Modern English dialects — just Middle English dialects; not Modern grammar, just Middle English grammar. In fact, not one course in contemporary English was required.

What in the world could have been the rationale behind this Ph.D program as training for an English teacher? That is the wrong question to ask. The program was never designed to train a teacher, just a scholar, most of whose time, if he is ultimately successful in his profession, will be spent finding out things that other literary scholars want to know — and no one else. Oh, there are exceptions. But they really are exceptions. In the large universities almost no one spends his life teaching writing unless he can't hack it as a literary scholar and got tenure before his deficiency was known, or of course that person might be a woman, and women don't require much promotion or much pay, especially if they are married. They can even be kept on part-time.

I say all this at a conference on writing because, if we want the teaching of writing to improve, it is essential that we understand realistically who is in power, who pulls the strings and speaks for us in those institutions that speak as if for all levels of education, the institutions that train the most people or train the people who train the people who teach writing.

If big English departments give a serious thought to the training of teachers of writing, that thought is likely to begin and end with "The best way to learn to teach writing is to study literature. That is all ye know and all ye need to know. That is the way I learned."

At these universities, not only is the writing teacher minimally trained, he is also minimally paid. Ninety percent of such teaching is done by the lowest paid people on the teaching staff: the assistants. If you compare their rate of pay per course with the rate of pay per course for the teachers of literature, you will find they get something less than half. Assistants are the penniless drudges of the system.

You may demur that "he isn't paid poorly because he teaches writing, but instead because he is only an assistant." Notice, however, that he is better prepared to teach literature than writing for the same money, but only over the dead bodies of the full-time staff would an assistant be allowed to teach one of the beloved literature courses.

Not only are these people minimally trained and minimally paid, they also are given the least respect and prestige. They are not even up to the lowest rung on the ladder. They won't be until they are elevated to instructors or assistant professors someplace else.

So in the big university English departments the future English professors of the nation learn quickly that writing is something you teach only temporarily to support yourself until you can teach what you are getting trained to teach and want to teach and will be paid to teach. You teach liter-

ature for love and money. You teach writing only for money.

Notice of course, how exquisitely the economics of freshman English works to the advantage of the advanced literature professors. The university as a whole and the public at large think that students ought to write better. The public and the other departments think the English professors are the people to teach them. So money is mandated for the task, so much per student. But the literature professors sub-contract the job most deftly. They hire assistants to do the work, taking fifty percent off the top for themselves. They also require that every assistant pay his tuition to take advanced courses in literature. The net result is that (1) the literature professors don't have to teach writing, which is onerous, (2) the money taken off the top provides some money for advanced literature classes, or for literary scholarship, and (3) the money taken as tuition from assistants pays more salaries for literature professors and (4) the warm bodies that enrolled generate more income from state tax funds.

I hope by this time you have found my description revoltingly inaccurate. I hope that the state of the profession is not as dismal as I say. After World War II, the peasants did revolt in the form of General Education. But by now that revolt is gone and forgotten.

Against this massive indifference to the teaching of writing there have been a few bright lights in the last two decades. Probably the most basic is the sudden availability of funds for research in our field. You may not realize that during the first half of my teaching career absolutely no funds beyond scholarships and fellowships were available for such a purpose. My study of syntactic maturity was one of the very first ones produced with the help of the massive federal funds that suddenly became available to the lucky in the early sixties. My funds led to the publication of a slim little volume, but that volume came out of material that filled four filing cabinet drawers and cost something like fifty thousand dollars. I employed as many as nine graduate students to look for things that I thought might prove fruitful. If I had had to do all that looking by myself, it would have taken a lifetime to learn what I learned in a couple of years. I am delighted that huge private industries like EXXON are providing funds too. These Funds can help us usher in a new day for the teaching of writing.

A second bright light in the last two decades is the establishment of techniques for evaluating writings reliably. So long as it takes four teachers to do a theme reliably, the ordinary class theme will not get the best of attention, but at least on special occasions when research funds are available we can now test out new teaching procedures and determine with confidence that one method really does produce better writing than another method does.

I would list as a third bright light the attention that has been given to syntactic maturity research and to its successful applications in sentence-combining curriculums. The syntactic-maturity research done in the last fifteen years is surely rigorously scientific and capable of verification. The fact that scientific research can be done in the area of language development, and, furthermore, that it can have practical values for education, should encourage a whole new generation of investigators to probe this newly opened area.

The progress being made in linguistic theory should suggest new clues for investigations into language development. One can hope that the vague

intuitions about the subtle differences in meaning between one expression and another may come to be expressed clearly and precisely as semantic theory expands.

Those being the more promising lights in the last two decades, where does the present conference fit into this setting?

If I had been present the day that the Conference on College Composition and Communication was first formed, I might have considered that day to be the brightest day during my lifetime for the teaching of writing. But I certainly consider this occasion the brightest celebration I have ever attended for the teaching of writing. I also consider it the brightest occasion for educational research in writing.

I saw the promise of the Kerek, Daiker, and Morenberg study when I first read the research proposal. I wrote back saying that the proposed study might turn out to be the most important piece of educational research conducted during the year. I hoped my prophecy would help to interest EXXON.

Privately to the authors of the proposal I expressed one misgiving about their otherwise excellent design: the time allowed for the two treatments was too brief. Instead of one semester they should allow at least one year.

I was concerned. For the experimental curriculum to be convincingly superior, it would have to be, not just superior, but measurably superior, using as the measuring instrument one that was notoriously imprecise. We all know how widely different the tastes of different teachers can be. To be measured superior the experimental students would need to be so manifestly superior that even ordinarily disagreeing judges would be forced by the evidence to agree. I was concerned that the judges might find no significant difference over so short a term. I was relieved that the prospectus said that the judges would evaluate blind not only the final posttests from both treatment groups, but also would evaluate blind the pretest-posttest differences for each group. We do know, without doubt, that as schoolchildren get older the writings they produce tend to get higher and higher scores from groups of teachers when teachers grade those writings blind. But, of course, if sample writings were taken at intervals too close together, this normal gain might not be large enough to show up. Or if the judges were unusually different from each other, again this normal gain might not show up. That was my worry.

That is why it was important to this design that the judges rate blind the amount of gain between the pretests and posttests. If they failed to detect a measurable significant gain over time, then we would have little confidence in anything they might say comparing experimental students with control students. But the judges passed that test of themselves with flying colors. And that is what makes their judgment about the superiority of the experimental curriculum so very convincing.

The results of the study are made still more convincing because the papers were graded holistically, analytically, and by forced choice, all three ways. Each method has its own strength and its own weakness, but when all methods give the same results, then it is hard to be skeptical even though I find it hard not to be incredulous.

Now that the results are in, I must admit that the one semester term was long enough, and that it is more impressive to establish superiority in one semester than in two.

All in all, I consider the Daiker, Kerek, Morenberg study as close to being a showcase study as any I know. I will be glad if it receives the NCTE's award for distinguished research in English some time in the next few years. I have urged its consideration for that award and perhaps some of you have done that too.

It seems strange that NCTE has made some fifteen awards so far for research, yet has never chosen a study which compares two curricula and measures that relative effectiveness of the two. NCTE should make such an award as soon as it finds a worthy object, because curricular debates at the present time are likely to be as childish as "Tis," "Taint," "Tis," "Taint" disputes. Neither side has any empirical basis for deciding whether one way to teach English is better than another. The only rational way to decide is to test the results. That is why the NCTE must begin to encourage such research. One good way to do so is to pick out a good example and then reward it and publicize it. I will be glad if this is the study that happens to.

No longer is it anything new for a study to prove that a sentence-combining (SC) curriculum produces longer T-units. Every study undertaken so far has done that. But until this Miami University study was published, even reasonable men could have reservations as to whether longer T-units, thus induced, were better T-units. No study before this one had tested a large population, and none had tested their skill so rigorously and diversely. I am now fully convinced that this particular SC curriculum with these particular teachers can produce better writing than I ever was able to produce. My own teaching would have fitted in comfortably with the control group teaching here.

I fancy that SC curricula will proliferate now, and that every major publisher will want one of his own. I am optimistic enough to fancy that most of these curricula will be beneficial. No esoteric knowledge or talent is required to produce one. Nonetheless, ten years ago when I was trying to produce, for a fourth-grade study, the world's first SC curriculum of the sort now called "open," I was very glad to have grant money to hire some of those penniless drudges I referred to earlier, so that they could create most of the exercises for me. A good exercise is bright and creative.

It is established already that SC curricula can be used in the early grades, and in the middle grades — and, now, at the university level. So it will not be surprising if we soon have such exercises for all levels — a ten-year curriculum covering grades four to fourteen.

But I have my fingers crossed for the SC idea as it goes out into the big world. The idea will be killed if one publisher rushes out a bad curriculum, untried, and oversells it scandalously for a quick take.

I remember the promise that transformational grammar had for language education fifteen years ago. Then extravagant promises were made. Its rise was meteoric, and the shower of sparks from its tail was golden. But when that sun exploded, it left a black hole where grammar used to be. And just as there are black holes out in space where no matter can enter, so no grammar-like study will be tolerated in the schools again for many years to come.

In anticipation of the publication of more and bigger SC curricula, we should note that there is already available a certain amount of data telling when a given transformation is likely to enter a child's syntactic repertoire. In the monograph on the *Aluminum* passage (Hunt 1970a) we tabulated each

transformation used by each age group in rewriting each one of the original sentences. That information shows stages of development and also, of course, shows one way to get more information of a similar sort.

In a paper called "Early Blooming and Late Blooming Syntactic Structures" (1977) I have given data to support Francis Christensen's belief that use of a certain structure is a mark of real maturity. The data presented in that paper is from a rewriting experiment, and is surely objective and persuasive. Furthermore, data from such a source is much easier to obtain than data from thousands of words of free writing produced by students of various ages.

Here is that data:

Francis Christensen, in his study of rhetoric, has singled out certain constructions as being particularly indicative of adulthood. One of those appears three times in this sentence which he cites from E.B. White. I have italicized the key words.

> We caught two bass, *hauling* them in briskly as though they were mackerel, *pulling* them over the side of the boat in a businesslike manner without any landing net, and *stunning* them with a blow on the back of the head.

Here we have four verbs with the same subject, all describing the same event. The input sentences, reduced to their skeletons, would be these:

> We caught two bass.
> We hauled them in briskly.
> We pulled them over the side.
> We stunned them.

These four sentences can be reduced to a single T-unit if we get rid of the repetition of subjects and add *-ing* to the verbs:

> We caught two bass, hauling them in briskly, pulling them over the side, and stunning them.

Out of ten fourth-graders who rewrote "The Chicken," not even one produced it. By ten eighth-graders, it was produced once:

> She slept all the time, laying no eggs.

By ten twelfth-graders this construction was produced twice. Here are both examples:

> The chicken cackled, waking the man.
> Blaming the chicken, he killed her and ate her for breakfast.

But the university students produced fourteen examples. In fact, nine out of ten university students studied produced at least one example, whereas only one out of ten twelfth-graders had done so. In the little time between high school and the university, this construction suddenly burst into bloom. Here are some examples from those fourteen occurrences.

> He caught the chicken, *planning* to eat it the next morning and placed it in a pen located below his window.

> The old man caught the chicken and put her in a pen under his window *planning* to eat the chicken for breakfast the

next morning. Early the next morning a sound woke the man, and *looking* out the window, he saw the chicken and an egg.

Living along in his farmhouse, and without any neighbors, there was no one for him to talk to, so he passed his days working in his garden, growing vegetables and grain. . . . *Thinking* what a delicious breakfast the chicken would make, he caught her and put her in a pen outside his window.

In anticipation of many new SC curricula, let me underline some of the classroom procedures which accompanied this curriculum and, in my opinion, contributed to its success.

1. Every exercise was a problem in how to express some prescribed thought in the best way, that is, using the best sentence structure. It was not an exercise in writing the longest T-units but the best ones. One might say it taught rhetoric using an SC format.
2. Many students worked on the same problem, investing their own time and thought before coming to class. As a consequence, they paid close attention and they cared about whether their solutions were good ones, and whether they would make good solutions next time before their peers.

   For many students to work on the same problem, it is necessary that someone prescribe the problem — either the teacher, the text, or some student.
3. In class, several solutions to each writing problem were presented, so class discussion tended to be about "better" and "not so good," not about the absolute "good" and "bad"of a single solution.

   A perceptive student would probably see something he wished he had done — and would try to remember to do next time.

   Each student could easily see the various solutions and compare them.
4. The judgments on solutions were made more often by the students than by the teacher. This has several virtues:
   a) Students usually accept the judgments of their peers without getting hung up on the authority problem which a teacher may arouse.
   b) Apart from the authority problem, the student is likely to care more about the approval of his peers than the approval of his teacher.
   c) Students who offered judgments would sense whether other students agreed or disagreed, and thus would learn to make more accurate judgments about their

own drafts. Such criticism of one's own version is an essential component of writing well.

d) An idiosyncratic judgment can be made by one person, including one teacher, but it is unlikely that a whole class will do so.

5. The subject matter of the writings was well adapted to the age group, and seemed lively and interesting. Obviously the subject matter for a much younger group would need to be different.
6. In making judgments on the students' solutions, the teacher strove to accent the positive, not the negative.
7. The various solutions were discussed in depth, if that seemed appropriate.

These procedures seem to me to have added to the effectiveness of this teaching, so that the results demonstrate the effectiveness not of just any SC curriculum but of one taught well.

For all of my teaching life I have listened to various proponents extol their own success with either the "sentence-skills approach," the "creativity approach," or the "reading approach." Proponents of the sentence-skills approach say, "Students have plenty of thought and experience to write about if only they knew how to say it. We need to work on how to say it, sentence after sentence." The creativity proponents argue, "Students write expressively when they have something to say. We need to help their invention." The "reading-approach" proponents say, "How can they write well when they haven't read anything? We need to show them how good writers do it. That's the only way they can learn."

It is easy to see which of these approaches governed the curricula of the big University English departments that prepared most of us, but at the end of the current round, the "sentence-skills" approach certainly has chalked up more points than the other approaches. If a return match could be arranged, or if a sort of World Series could be worked out in which each approach gave great thought and attention to developing a winning combination, then such competition would no doubt winnow away a great amount of nonsense which otherwise survives in the English-teacher's world, in which all opinions alike are incapable of verification.

In that world of unverified opinions, one can even hear William Strong, author of the very successful SC exercises used in the Miami University study, say aloud, "In no sense then, is sentence combining a comprehensive writing program in and of itself. It can be a *part* of a well-articulated program, but common sense suggests that it can't be the one and only instructional strategy. That would be sheer lunacy" (Strong 1976:61). In the new world here today, where an important verification has just occurred, we must revise that statement to read, "In every sense, sentence combining can be a comprehensive writing program in and of itself, for at least one semester. It is nonsense, rather than common sense, to suggest that SC can't be the one and only instructional strategy, at least for one term. To doubt the sufficiency of sentence combining is sheer lunacy." If I were Mr. Strong I would chortle in delight to find out how much better my work was than I thought.

SENTENCE COMBINING AND COMPOSING IN THE CLASSROOM

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Sentence combining (SC) is now clearly recognized as an important method of attacking the syntactical underdevelopment which plagues many of our students (the premier studies are Hunt 1965a, Mellon 1969, and O'Hare 1973). It does indeed foster both awareness of sentence variety and linguistic flexibility. Yet the practical question which concerns most English teachers now is, "But does it teach good writing?" As James Ney has put it recently, "Will the average working teacher of Freshman English want to devote more than a segment of the freshman composition course to sentence combining activities?" Ney answers himself by declaring, "SC activities are ancillary to all the other activities that students should be engaged in with the direction of a competent teacher" (Ney 1978:303). And, in the most recent issue of *College Composition and Communication,* Richard Graves seconds this opinion by saying, "Valuable though it be, SC, as a composing skill, must be considered a low-level activity, for it requires the learner to deal with only one aspect of the composing process, namely, the manipulation of relationships inside the sentence" (Graves 1978:229).

These critics are undoubtedly correct if we understand SC in the narrow sense as a linguistically based method for teaching manipulation of syntax. But I shall argue that if we properly understand SC and recognize its pedagogical uses, we find that SC can transcend its own name and be used to teach more than the combination of dictated sub-sentences.[1] If we construe SC in this larger sense, it quickly becomes a pedagogical device which permits us to teach not only that phase of the writing process which James Britton has called "shaping at the point of utterance" but also provides a framework for teaching organization and revision (Britton 1978:24).

This wider application of SC does, however, imply a change in our assumptions, a different set of priorities of which we should be explicitly aware. Let me, then, first describe one possible sequence of instruction which uses SC as a base to teach these other related skills before I point out the different assumptions behind SC as a way of teaching syntax and SC as a way of teaching composing.

There are many possible scenarios. In my sequence the students begin by studying paragraphs — topics, thesis statements, evidence, and support. But as we look at student-written paragraphs in class, I introduce the notion of syntactical options by posing the question, "What is another version of that sentence?" That is, I ask all the students actually to write alternative versions of a particular sentence in a particular place in a particular paragraph. At the outset, the emphasis is on play, and I do not define closely how they are to produce other versions or how the other versions are to be different. So, some students will change diction, some will paraphrase, and some will remake syntax. These initial exercises are intended only to provide the students with needed practice in recognizing that there are many ways to express any given

idea and that some of these versions will work better than others in a given context. We spend at least half of class time discussing the rhetorical impact of various versions, analyzing the reasons to choose one over the other.

The students do need, and get, usual SC instruction in syntax beginning about two weeks into the course. Some class time is then devoted to discussing the various transformations students produce, but we continue to devote most attention to examining student paragraphs. A common exercise at this point in the course is to ask the students to incorporate, for example, an appositive into a paragraph under analysis in class. Sometimes I designate the place where it is to be added and ask them to provide logically workable content. Sometimes I leave them to spot the place which begs for an appositive using their rhetorical judgment. The main concern in assignments at this point is to exert continual pressure for the students to use the new constructions in their writing and to use them with full concern for appropriateness.

When the students have been exposed to major patterns within the sentence, they move immediately to paragraph-length non-cued exercises. For the next several weeks, class discussion focuses on various student versions of a paragraph exercise. These sessions of comparative criticism inevitably re-expand the focus of class concern from syntax to organization, word choice, even punctuation and grammar, a widening which is essential and healthy.

These non-cued paragraph exercises are the most important single tool in using SC to teach composing. They do, of course, offer exercise in comparative syntax, but they inevitably raise questions of style, grammar, punctuation, and they offer an ideal format for demonstrating various possibilities of sentence combination within the paragraph. I encourage the students not to be bound by the sentence limits suggested in the exercises. Thus, for example, they might make the first group of kernels into one sentence or three, or they might combine two groups in one sentence. Or I ask them to play with sentence length in revision. I tell them to keep the length of a paragraph constant and double or cut in half the number of sentences, or perhaps to double the length of the paragraph while holding the number of sentences the same. As always, the class discussion should focus on enunciating the differences between different versions and discussing which versions are most appropriate for which audiences and rhetorical goals.

After extensive exposure to the patterns of organization in the paragraph exercises, the students find that organization comes naturally to them. Here, too, SC exercises work remarkably well. I may provide a string of kernels which would be suitable for a thesis and have the students each produce two versions of the combined sentence, then discuss the paragraph structures implied by the various versions, and conclude the exercises by having the individual students choose different versions of the thesis and write up paragraphs. Alternatively, I may give several students different versions of a thesis, have them write paragraphs to follow their versions, then read the paragraphs aloud without the thesis and have the class decide which paragraph goes with which version of the thesis. Such practice teaches more than low-level manipulation of single sentences — it teaches writing in the broadest sense.

The assumptions which govern this kind of SC-based course are different from those of Ney and Graves and from those of researchers like Murray

Stewart. Perhaps the most essential alteration lies in the fact that this kind of course emphasizes the teaching of syntactical patterns less than it emphasizes the two-step process of generating "versions of discourse" (phrases, sentences, paragraphs) and choosing among them on rhetorical grounds. Thus it works on the assumption that "syntactic maturity" is not an end in itself, that the ability to correctly produce appositives, absolutes, and cumulative sentences is less important than the ability to create a series of sentences which is clear and efficient and appropriate to your audience and goals.

This course of instruction also short-cuts and virtually ignores de-combining. At no time are students given explicit instruction in reducing sentences to their kernel strings.[2] Moreover, they work from kernels relatively less than students in most of the described research. Instead, most of the time they are asked to transform a given statement, or to re-combine several statements. The assumption here is that the instruction should parallel the actual process of composition as much as possible. Writers do not typically *compose* kernel strings, then *combine* them. Instead, they draft one version, then play around with it, revise, and write another version, all the while trying to pull it into line with their mental vision.

Finally, this course of instruction operates primarily with paragraph length and longer units of writing. Again, the rhetorical assumption governs. Choices between versions of statements must be made in the context of larger units of discourse and their intentions and form. Syntax cannot stand alone.

And thus I return to my original point. Syntactic facility is a significant skill, but it is not writing. Only when we broaden our understanding of what SC can do, and change our assumptions accordingly, can we get the maximum out of SC.

If we construe it narrowly as a means of inducing "syntactical maturity," it can provide a controlled way to teach an important (and hitherto systematically unteachable) phase in the composing process — "shaping at the point of utterance." But it is demonstrably more important if we construe it broadly as a pedagogical device with which to teach other phases of composing as well.

NOTES

[1] Research evidence supporting just this position is now available; see Morenberg, Daiker, and Kerek 1978, and Stewart 1978c.

[2] Ney (1976a) reports that students did not benefit from de-combining exercises.

USING 'OPEN' SENTENCE-COMBINING EXERCISES IN THE COLLEGE COMPOSITION CLASSROOM

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Can sentence combining be made the center of a college composition course, a recent contributor to *College Composition and Communication* asks, without causing students to revolt out of sheer boredom? That this question is asked in a major professional journal may reveal a widespread misunderstanding of the evolution of sentence-combining exercises; at least, it implies that the questioner has not yet become aware of *open* sentence-combining exercises or does not know how to use them in the classroom. Perhaps he knows only the useful but limited form of sentence combining called *closed* or signalled exercises. A typical closed exercise consists of two or more sentences with a set of instructions so specific that there is usually but one wholly correct way of making one sentence from several. Here, borrowed from John Mellon, is a sample closed exercise:

> SOMETHING would be almost unbearable.
> The rocket fails in its final stage. (T:infin)

By transforming the second sentence into an infinitive phrase and substituting it for SOMETHING in the first sentence, the student is expected to reach the one correct answer:

> For the rocket to fail in its final stage would be almost unbearable.

Although closed exercises help students at any grade level practice specific constructions like infinitive phrases, they seem too mechanical and too restrictive ever to become the center of a college composition course. Indeed, their exclusive use might well justify revolt.

But when open sentence-combining exercises are made the organizing principle of a college composition course, they are more likely to excite student imagination than incite student revolution. Open exercises, like those found in William Strong's pioneering textbook *Sentence Combining: A Composing Book* or in our own *The Writer's Options: College Sentence Combining*, essentially differ from closed exercises in their degree of freedom and their range of options. If closed exercises specify what structures are to be used and how they are to be made, open exercises are accompanied by more general instructions like "combine these sentences into an effective paragraph." It is the open exercise which most clearly illustrates that sentence-combining — despite its name — involves units of discourse larger than the sentence and provides practice in writing skills that go far beyond mere combining, even beyond syntax in its broadest sense. The open exercise demonstrates that a more accurate term for sentence combining might be "disciplined writing practice."

Here is an open exercise from *The Writer's Options:*

THE HOME FRONT

Combine the following sentences into an effective essay. The spaces between groups of sentences indicate where one of your sentences may end and another begin, but feel free to ignore the spaces whenever you choose.

1. "Rosie the Riveter" was the symbol for the civilians.
2. The civilians worked for the war effort.
3. The work was during World War II.

4. She was like all of them.
5. All of them rode to work at a war factory.
6. The riding was in a '38 Studebaker.
7. The Studebaker had bald tires.
8. The car was filled to capacity.
9. But the car was short on gas.

10. She put up blackout curtains at night before she did this.
11. She turned on the lights.
12. And she tuned in the radio.
13. She wanted to hear Gabriel Heatter or H.V. Kaltenborn.
14. They had the latest reports from the European Theater of Operations.
15. They had the latest reports from the Pacific Theater of Operations.

16. She made supper.
17. At the same time, she was listening to "Amos 'n Andy" or "The Hit Parade."
18. She was listening to "Gangbusters" or "Lux Radio Theater."

19. But mostly she thought about her husband.
20. Her husband was "somewhere in the Pacific."
21. The censored letters always said "somewhere in the Pacific."

22. This was it.
23. Millions of Americans spent the war years somehow.
24. They were waiting for loved ones in uniform.
25. They were listening to the news on the radio.
26. And they were taking part in this.
27. It was the greatest production effort a people have ever made.

28. Women like Rosie learned how to do this.
29. They soldered.
30. They ran lathes.
31. They drove buses for this reason.
32. They wanted to replace men.

33. The men were needed for combat.

34. High-school kids worked evenings.
35. They worked in tank factories.
36. They worked in steel mills.

37. Old people took up trades.
38. The old people were in retirement.
39. The trades were half-forgotten.

40. They produced the weapons.
41. The weapons fought the Axis powers.
42. They produced 296,029 airplanes.
43. They produced 86,333 tanks.
44. They produced 319,000 artillery pieces.

45. They raised steel production by 70 percent over prewar years.
46. They increased the production of aluminum by 429 percent.
47. They increased the production of magnesium by 3358 percent.

48. They saved tin cans.
49. They brushed their teeth with half-brushfuls of toothpaste.
50. They worked at the local U.S.O.

51. They walked the darkened streets in the evenings.
52. They were air-raid wardens.
53. Or they strained their eyes.
54. They were peering through the night skies.
55. They were aircraft-warning watchers.

56. They waited.
57. They worked.
58. They lined up.
59. The lining up was for hard-to-get-items.
60. Sugar was a hard-to-get-item.
61. Nylons were a hard to get item.
62. Tires were hard-to-get items.
63. Coffee was a hard-to-get item.
64. Their ration coupons were in hand.

65. They were a people.
66. The people were united against totalitarianism.
67. The people were united in their desire.
68. They wanted to win a war.
69. They believed in the war.

Although the stated instructions for "The Home Front" are simply to create an effective essay from the given sentences, you have nearly as many options in assigning an open exercise as your students have for completing it. For example, you can require your students to use, at points in their essay that

they determine for themselves, the specific constructions emphasized in recently assigned closed exercises, constructions like appositives or absolutes or paired coordinators. You can instruct your students to add several details of their own or, conversely, to eliminate from their finished version the two or three details least relevant to their thesis. You can direct them to add an introduction or a conclusion, or to restructure the essay so as to focus less on American unity and more on the importance of the radio. Or, whenever you choose, you can specify an audience for your student writers — perhaps a group of World War II veterans or of ERA supporters, perhaps readers of the *Encyclopædia Britannica* or of *Playboy* magazine.

However you modify the instructions, open exercises like "The Home Front" always challenge the student writer to make a series of effective rhetorical choices. So that students learn both to recognize the range of their choices and to evaluate the relative effectiveness of each choice, you *must* make some completed student versions available to the entire class. To do so, try using the blackboard, an overhead projector, or dittoed or mimeographed copies. If you had assigned "The Home Front" as homework and selected several students to submit their completed assignments on ditto masters, you could then distribute to your class versions like the following three:

The Home Front
[Student version #1]

"Rosie the Riveter" was the American symbol for the civilians working for the war effort during World War II. She rode to work in a crammed '38 Studebaker with bald tires and an empty gastank. At night she would put up blackout curtains, then turn on the lights and tune in the radio so she could listen to Gabriel Heatter or H.V. Kaltenborn, who broadcasted the latest reports from the European and Pacific Theatre of Operations. Later, while making supper, she listened to popular radio shows such as: "Amos 'n Andy" or "The Hit Parade," "Gangbusters" or "Lux Radio Theatre." But her thoughts rarely strayed from her husband who was "somewhere in the Pacific."

This was how millions of Americans spent the war years, waiting for loved ones in uniform, listening to the news on the radio, and unknowingly taking part in the greatest production effort ever.

Everyone pitched in. Women learned to drive buses, soldered machinery, and run lathes; high-school kids worked long evenings in tank factories and steel mills; old people took up half-forgotten trades; all because men were needed for combat. Together, they raised the production of steel, aluminum, and magnesium by overwhelming percentages. Which enabled them to produce a total of nearly three-fourth of a million artillery pieces, tanks, and airplanes: weapons that fought the Axis powers. They saved tin cans, brushed their teeth with half-brushfuls of toothpaste and worked at their local U.S.O. In the evenings, air-raid ward-

ens walked the darkened streets as aircraft-warning watchers strained their eyes peering into the night skies.

Waiting in lines for those hard-to-get items: sugar, nylons, tires, and coffee, they held on tightly to their ration coupons. They were a people united against totalitarianism. United in their desire to win a war, a war they believed in.

The Home Front
[Student version #2]

The civilians who worked for the war effort during World War II were symbolized by the figure of "Rosie the Riveter." She like all of them rode to the war factory where they worked in a '38 Studebaker, filled to capacity but short on gas, with bald tires.

At night before she turned on the light and tuned in the radio she put up blackout curtains. She wanted to hear Gabriel Heatter or H.V. Kaltenborn because they had the latest news from the European and Pacific Theater of Operation. While making supper she listened to either "Amos 'n Andy," "The Hit Parade," "Gangbusters," or "Lux Radio Theater" but mostly she thought about her husband whose censored letters always said he was "somewhere in the Pacific."

Millions of Americans spent the war years this way; listening to news on the radio, waiting for loved ones who were in uniform, but they were all taking part in the greatest production effort a society had ever been engaged in. Women like Rosie learned how to solder, run lathes, and drive buses to replace men who were needed for combat.

While high-school kids worked evenings in tank factories or steel mills, retired people again took up their half forgotten trades. They produced a total of 296,029 airplanes, 86,333 tanks and 319,000 artillery pieces, all weapons which fought the Axis powers. They raised production of steel by 70 percent, aluminum by 429 and magnesium by 3358 percent over prewar years.

Everyone helped out in their own way: saving tin cans, brushing their teeth with half-brushfuls of tooth paste, working at the U.S.O. They walked down darkened streets, straining their eyes through the night sky watching for approaching enemy aircraft. They waited and worked. With their ration coupons in hand they lined up for Sugar, Nylons, Tires, and other hard to get items.

They were a people, united in their desire to suppress totalitarianism. They were a people united to win a war they believed in.

The Home Front
[Student version #3]

In most World War II texts and movies, glorious American soldiers are idolized as they conquer shattered cities and raise victory flags over half-standing battlements. It is easy to give credit to these men for their accomplishments, but it is even easier to neglect the people in their shadows — the people on the "homefront." Uniting together, millions of American "homefronters" helped contribute substantially to overseas victories.

"Rosie the Riveter," the nickname for civilian women working for the war effort, represented the vast number of dedicated housewives who sacrificed comfortable lives for long days of work, worry, and sweat. Many had the same schedule. They rode to work early in the morning in a '38 Studebaker filled with too many people and too little gas. At night, after a long hard day of work, they would put up blackout curtains, turn on the lights and tune in the radio to hear Gabriel Heatter's or H. V. Kaltenborn's latest reports from both the European and Pacific Theater of Operations. But mostly they thought about their husbands who, according to the censored letters, were "somewhere in the Pacific."

During these years of waiting for loved ones in uniform and listening to the news on the radio, Americans took part in the greatest production effort a people have ever engaged in. To replace men needed for combat, women like Rosie learned how to solder, run lathes and drive buses. In the evenings high-school students worked in tank factories and steel mills, and even old people in retirement took up half-forgotten trades.

All together, U.S. citizens produced 296,029 airplanes, 86,333 tanks, and 319,000 artillery pieces which were used by the Allies to thwart the spread of Fascism. They raised the production of steel by 70%, aluminum 429%, and magnesium 3358% over prewar years. Civilian air-raid wardens walked the darkened streets in the evenings and aircraft-warning watchers strained their eyes to peer through the night skies. During the day, people lined up, ration coupons in hand, for the hard-to-get items like nylons and tires, coffee and sugar.

These were a people united — united against totalitarianism and united in their desire to win a war they believed in.

Once the three versions of "The Home Front" have been read aloud, class discussion can move in whatever direction you and your students choose. You might begin with broad questions about thesis and organization. Is one version most effective in clearly stating its central idea? Is version #3 strengthened because its thesis is stated in the first paragraph? Is anything lost from versions #1 and #2 because their thesis statements are delayed until the final

paragraph? From questions about thesis placement you might turn to supporting details. Does version #3 improve with the names of the radio programs eliminated? What about its omitting the tin cans, half-brushfuls of toothpaste, and the U.S.O.? Does version #3 gain from the original details added at its beginning? Does version #1 improve with the specific production numbers and percentages converted into round figures? Do students with unreproduced versions of "The Home Front" want to volunteer some of their own additions or omissions for class reaction? Finally, are there general standards for determining which details to include and which to omit?

You might next consider organizational questions. Since all three versions follow the order of the original sentences — some open exercises consist of deliberately misarranged sentences that must be reordered — discussion will probably emphasize paragraphing and coherence. You might ask whether the short concluding paragraphs of versions #2 and #3 are more effective than the longer concluding paragraph of version #1. Are the details of people waiting in line more appropriate to the essay's last or next-to-last paragraph? What should the last paragraph of an essay accomplish? The same as the first? Does the first paragraph of #1 improve when it is divided into two separate paragraphs, as in #2? How effective is the one-sentence second paragraph of version #1?

Of course, open exercises allow for more than asking questions of your students. They furnish concrete examples of writing strategies and techniques that will be more readily and successfully imitated by your students than will the faultless prose of E. B. White or Henry David Thoreau. For example, the student versions of "The Home Front" illustrate several effective techniques for creating coherence. One such technique is the short transitional sentence: "Everyone pitched in" in version #1 or "Many had the same schedule" in version #3. Another technique is the transitional word or phrase like "Later" or "But" in the first paragraph of #1, "All together" and "During the day" of #3. With these examples, your students are better prepared to improve the coherence of version #2. Its first two paragraphs can be more tightly connected by the kind of transitional phrase found in the same position in version #3, "after a long hard day of work." With this suggestion, the second paragraph of version #2 becomes "At night, after a long, hard day of work, she put up the blackout curtains before turning on the light and tuning in the radio." A different strategy of coherence might be used to strengthen the connection between the third and fourth paragraphs of version #2. One possibility is a short transitional sentence like "But it wasn't only women who helped" or "Young and old contributed." Another effective strategy of coherence is the repetition of a sentence pattern. If you remove *while* from the opening of the fourth paragraph, the subject-verb-object pattern of "High-school kids worked evenings in tank factories or steel mills" repeats the pattern of "Women like Rosie learned how to solder, run lathes, and drive buses" in order to join the two sentences more tightly together.

Whenever you finish with problems of coherence and organization, the fifth paragraph of version #2 offers a smooth transition to questions of punctuation and grammar. The paragraph opens with a sentence that is at once a highly effective transition and an example of grammatical error: "Everyone helped out in their own way. . . ." After acknowledging the excellence of the transi-

tion — praise is especially welcome now because you earlier called attention to weaknesses of coherence in this version — you may want to identify and then correct the error in pronoun-antecedent agreement. If you ask for student suggestions, someone will probably revise the sentence to read "Everyone helped out in his own way." Depending on your own attitudes, you will either approve the suggestion or begin a lecture on the non-sexist use of pronouns. Instructors who highly value grammatical correctness will find a way to shift discussion to the sentence fragments in the last and next-to-last paragraphs of version #1. From there, they are likely to go to examples of faulty parallelism in versions #1 and #2, then to the misplaced modifier and vague pronoun reference of #2. But sentence combining as a method no more implies an attitude toward traditional grammar than it favors the cumulative sentence over the periodic or long sentences over short ones. Despite the research that has linked training in sentence combining to increased T-unit and clause length, sentence combining can as easily teach students to write in the style of the early Hemingway as the later James. It all depends on the values instructors communicate to their students.

Had you begun with the full sentence "Everyone helped out in their own way: saving tin cans, brushing their teeth with half-brushfuls of toothpaste, working at the U.S.O.," discussion might have turned to questions of punctuation instead of grammar. Is the colon used correctly here? What about the colon in the last paragraph of version #1? Are the colon and the dash (used in the first and last paragraphs of #3) interchangeable? Why not? What is the difference between them? And how does each relate to the semi-colon? Is the semi-colon appropriate in the third paragraph of #2? Is there a comma problem in the first paragraph of #2? In the first paragraph of #3? In teaching punctuation, grammar, or any other writing element, you can always move beyond student versions to introduce examples of your own, to suggest options that your students have not chosen, or — so that students can practice what they've just discussed — to assign short, in-class writing exercises on anything from the comma splice and the colon to figurative language and tone. Occasionally, you may want to reproduce your own version of an open exercise to be read and evaluated with the student versions.

If any class time remains, you can begin a discussion of diction by explaining the appropriateness of *battlements* in the first paragraph of #3 and the inappropriateness of *suppress* in the last paragraph of #2. When you eventually move from words to phrases, you might ask for examples of wordiness. One student may suggest that *rode to the war factory where they worked* in the first paragraph of #2 becomes more concise as *rode to work at a war factory*. Another student may show that, in the second paragraph of #2, the sentence "She wanted to hear Gabriel Heatter or H. V. Kaltenborn *because they had* the latest news from the European and Pacific Theater of Operations" improves as "She wanted to hear Gabriel Heatter or H. V. Kaltenborn *with* the latest news. . . ." Perhaps a third student will ask about the middle paragraph of #3. Can't its opening be shortened? With the help of your students, you might conclude that *During these years of working and waiting* is more forceful than the longer *During these years of waiting for loved ones in uniform and listening to the news on the radio.*

Making sentences and phrases more concise may lead, perhaps in a later

class, to a full discussion of syntax. Actually, the sentences in the three student versions of "The Home Front" are so varied and so rich that you could easily spend an entire class commenting on nothing but syntax. Appositives, participles, absolutes, balanced phrases, subordinate clauses, interrupted coordination, series variation, complex prepositional phrases, noun substitutes — all these constructions and more are here to be recognized, contrasted, evaluated, and — as often as possible — held up for imitation. You would certainly want to call attention to the very best sentences: in #1, the last sentence of the first paragraph; in #2, the first sentence in the fourth paragraph; and in #3, the last sentence of the first and fourth paragraphs. Such excellent student sentences are most likely to be imitated if they are read aloud more than once and then recited aloud by the whole class.

But the syntax of some student sentences should be improved, not imitated. Look, for example, at the conclusions of the three versions of "The Home Front":

1. They were a people united against totalitarianism. United in their desire to win a war, a war they believed in.
2. They were a people, united in their desire to suppress totalitarianism. They were a people united to win a war they believed in.
3. These were a people united — united against Totalitarianism and united in their desire to win a war they believed in.

All three student writers apparently realize that repeating key terms or sentence elements, especially at the conclusion of an essay, is an effective means of emphasis. But all have problems making repetition work. In the first version, the fragment is more disruptive than emphatic, and the repeated *a war* sounds too artificial to be forceful. The second version is adequate but undistinguished, even if the misplaced comma is removed. The third version is good, but something is wrong with its rhythms. After you have praised all three students for experimenting with repetition, you might request suggestions for improvement. If you are greeted with silence, venture the generalization that repeated words usually work most effectively when they are separated from each other by at least one intervening word. With this hint, one of your students may volunteer a sentence like this:

> These were a united people — united against totalitarianism, united in their desire to win a war they believed in.

Now that the sentence has been improved, you can choose whether to have it recited aloud, to request additional student suggestions for improvement, to assign a related in-class writing exercise, or to move to a totally new area of discussion.

Because of such choices, an open sentence-combining exercise like "The Home Front" gives composition teachers relevant material for at least two fifty-minute classes. More important, a single open exercise can help teach just about any significant writing skill or strategy.

In part because students sense their growing mastery of skills and strategies, they generally enjoy working out the open exercises and then discussing them — often heatedly — with their classmates and instructor. It's hardly surprising, after all, that they would rather discuss their own writing than locate topic sentences in a Walter Lippmann essay, or review the four indispensable properties of all respectable paragraphs. Of course, sentence combining does more than spark student enthusiasm for writing; as experimental studies have shown, training in sentence combining enhances syntactic maturity and improves overall writing quality. One plausible explanation for such success is that sentence combining places student writing at the psychological and physical center of the composition course. What becomes psychologically most important in a sentence-combining course is not the prose of George Orwell or James McCrimmon but the sentences, paragraphs, and essays of Kathy Huber who sits in the second row and Jon Barnes who sits in the fourth. Making immediately clear that nothing counts more than the writing of your students helps in subtle but perceptible ways to increase their interest in writing and to build their confidence as writers. But making student writing the physical center of the course is equally important: sentence-combining teachers keep the focus on student writing by consistently assigning writing exercises as homework and by occasionally assigning writing exercises in the classroom. In a sentence-combining course, the act of writing is usually not reduced to equality with reading about writing, reading essays by professional writers, or studying language and grammar. In fact, a major premise of sentence combining is that you learn a skill by practicing a skill. That is, you learn to write best not by writing for one day, reading about it for two days, and then watching others demonstrate it for three more; you learn to write best by writing all six days.

Once your students realize that a sentence-combining course built around open exercises confronts them with a variety of interesting and meaningful writing decisions, they will have little time left for boredom. And once they understand that the skills learned from the exercises do in fact transfer to their original compositions, helping them to become better writers and to receive higher grades, they will surely have no desire for revolt.

SENTENCE ANALYSIS AND COMBINING AS A MEANS OF IMPROVING THE EXPOSITORY STYLE OF ADVANCED COLLEGE STUDENTS

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While there has been extensive research on sentence combining as a means of improving the writing of elementary-school students (Mellon 1969; Miller and Ney 1968; O'Hare 1973) and college freshmen (Daiker, Kerek, and Morenberg 1978), few if any studies have looked into the possibility of using this method to increase the syntactic maturity of advanced college students. While such students have achieved a certain level of maturity in their writing style as compared with college freshmen, many advanced students, even graduate students, lack the polished, stylistically mature prose style they would like to have. Since writing is a skill without definable limits, no one ever reaches a point at which improvement is not possible. Advanced college students, especially if they are not English or journalism majors, may discover very late in their college careers that they are lacking in the ability to express themselves effectively in writing.

Working with such students in the Writing Center at East Texas State University, we discovered that an approach which combined sentence analysis with sentence-combining practice yielded rapid and satisfying results in increased maturity and improved style of writing. While most proponents of sentence combining deplore the inclusion of any type of grammatical analysis, we found that with advanced students the addition of this component increased both the rate and quality of improvement. The effectiveness of the sentence-combining practice should not be surprising, even though it has apparently not been extensively used at this level. However, the integration of sentence analysis with sentence combining may need further justification.

Although researchers (most recently Richard Graves in the current issue of *CCC)* continue to warn us that a study of grammar will not improve writing ability, we have found that if it is presented in conjunction with sentence combining, grammar can be an effective adjunct to the teaching of writing. Defining grammar primarily as syntax, we enhance the effect of sentence-combining practice by adding to it the grammatical component, which enables students to analyze their own writing and thus to work specifically toward the kind of writing style they want to achieve. For example, students who practice sentence combining are improving their ability to handle coordination, subordination, and modification within the structure of the sentence. Without some concept of what is involved in these processes, students must slowly acquire these skills and then even more slowly transfer them to their own writing. By supplementing their sentence-combining practice with some simple instruction in sentence structure, students can much more rapidly assimilate these concepts into their own writing. This increased knowledge of syntax also enables the students to identify the strengths and weaknesses of their writing so that they can work specifically on those areas that most need attention. An addi-

tional advantage is that, by giving students instruction in basic sentence structure, we enable them to avoid the convoluted, engorged syntax that Christensen (1968b: 574-76) claims often results from sentence-combining practice. The students use the knowledge of syntax that they gain not only to analyze their own writing but also to direct their improvement specifically toward constructions such as free modifiers which, again according to Christensen (1968b: 579), are characteristic of a mature style.

A further advantage derived from teaching students to analyze their own sentences is that these students become more aware of writing as a process. Britton, et al. point out in their valuable study, *The Development of Writing Abilities (11-18)*, that most writers are unaware of the choices involved in the writing process except when "the task is difficult or complex, or when the external constraints are strong." At such times, "the fluent process is often interrupted by the need to make conscious choices — to select the appropriate word, to make sure of the punctuation, to keep the tone and level of formality consistent, to decide about intricacies of grammar and syntax" (Britton et al. 1975: 41).

In addition, there are times when it is desirable to focus on the process itself so that the process can be modified. By deliberately making our students aware of how they put words and sentences together — by forcing them to deal with their stylistic choices on a conscious level — we are able to improve and vary the choices that they make. Sentence-combining practice reinforces this ability to see and make choices, but on a less conscious level.

The type of grammatical analysis we employ does not necessitate a comprehensive knowledge of grammar on the part of the students. Because we are primarily interested in improving the style of their writing, students are not expected to master extensive grammatical terminology or rules. We concentrate on giving them just enough instruction to make it possible for them to analyze their own writing, especially their sentence structure — how they put sentences together and how these sentences relate to each other. Thus they begin to realize that the arrangement of words in a sentence determines the weight and emphasis of those words. Or, as Virginia Tufte emphasizes, they begin to perceive that syntax is essentially and ultimately a matter of style (1971: 1-12).

While this combined approach might work equally well with other students, it is particularly well suited to the needs and abilities of advanced college students, who are frequently highly motivated and capable of understanding the arbitrary and abstract concepts involved in even the most minimal study of grammar. Instructing in the Writing Center at East Texas State, we were constantly faced with such students who were dealing with sophisticated and syntactically complex material but who, in written interpretation of this material, reverted to a very elementary (S-V, S-V-O) style of discourse, characterized by a lack of sentence variety and by inadequate transitions.

Facing the writing of a thesis or dissertation, these students felt an immediate need to know how their writing could be improved. Further, they saw the future value of learning good writing skills since they would be needing to publish their ideas and to criticize constructively their own students' writing. Aware of their elementary style, the students were not satisfied with merely having someone proofread their papers. They knew that correction of mechanical errors and diction was not enough to improve the quality and

style of their writing. For too long they had written a first-draft paper, turned it in, received a grade, and then forgotten about it. With our help, they began to realize that their first drafts amounted to only pre-writing, writing that their thesis committees would not accept. The *process* of writing had now become their concern.

Instruction for these students began with an analysis of the students' own writing, using a chart that we devised from a study conducted by Herman Struck at the University of Michigan (Appendix A). We started with this analysis because most of the students came to us with a piece of their own writing to be edited. The sentence-analysis chart gave the students an objective method by which to look at their own writing. Because most of the students did not know a participle from a preposition, we included with the chart a handout that explained and gave examples of the different constructions (Appendix B). In addition, the analysis was often done in the Writing Center with the assistance of a tutor, the tutor explaining with the least amount of jargon possible those terms that were unfamiliar to the student. The charting process continued with the student's listing the verb of his independent clauses, counting the number of independent clauses, and identifying the basic sentence patterns of those clauses.

After the students completed charting their own writing, they were asked to chart the writing of a professional writer in their field. Often for the first time, the students looked at not only what a writer was saying but also how he said it. As elementary as this exercise might seem, it gave the students their first insight into style and the significant role it plays in writing.

The next stage in instruction required that the student compare his chart with that of the professional writer. Typically, the student found his own sentences repetitious in their beginnings, in their use of certain verbs, and in their use of right-branching sentences.

A typical example is provided by the following excerpt from one student's paper:

> Mueller (1976: 145) in an extensive review of the literature points out that American society is characterized by death denial and fear of death. Feifel (1963: 94) points out that death education is as important as sex education," . . . perhaps more so since death is more universal than sex."
>
> Brammer (1973: 2) identifies helpers as being a formula in which an individual helps another human being. The formula is a process:
>
> Personality of helpers + Helping Skills = Growth-Facilitating Conditions → Specific Outcomes
>
> Carkhuff and Berenson (1967:44) point out succinctly that an important consideration in helping is the helper's level of functioning as well as the kinds of techniques utilized. Five distinct levels of functioning are described with the singular, haunting implication that in order to be helpful, the helper must be functioning at a level higher than the helpee on the significant facilitative dimensions.

Notice that the student began each of his sentences with a subject, four of which were the names of writers. Furthermore, he repeated the verb "to point out" in three of his five sentences. Any use of subordination came at the end of the sentence. Not only is this style elementary and redundant, but there is also a failure to indicate the relationships between his ideas and the application of the references cited to his own study.

In order to remedy these problems, which the student was now aware of, we began stage two of our instruction: combining sentences. The student was asked to do sentence-combining exercises, varying his sentence beginnings and using left-branching sentences as much as possible. Once the student understood and had acquired some skill in sentence combining, we began a second phase of the sentence-combining practice, one we adapted from a study done by Marilyn Sternglass at Indiana University of Pennsylvania.

In this exercise, we selected a passage from a professional writer and broke it into kernel sentences. The students were asked to combine these groups of kernel sentences, then to compare their results, and to discuss the different effects of each of the combined kernels. After the discussion the group was shown how the original author had combined the same kernels. Thus from the kernel sentences

> My father died.
> He died on July 29th.
> He died in 1943.

students might produce a number of different versions (e.g., My father died on July 29, 1943; On July 29, 1943, my father died; In 1943 on July 29, my father died). Students were then shown the form which the original writer had chosen for this sentence: On the 29th of July, in 1943, my father died. The students discussed why the writer chose this version and the effect that his choice had on the reader. In the next series of kernels the students were able to anticipate the writer's style and to combine the sentences in a similar way. After a series of these types of passages had been worked through and discussed, the students began to understand how a writer's style actually can be anticipated and how the writer shows relationships between sentences not only through ideas contained therein but also in the way — the style — in which they are presented.

After completion of this unit, the students were asked to transform their own sentences into kernel sentences and re-write them in other ways. In the case of the student who wrote the paper used as an example, he realized that the ideas he was carrying in his mind had not been communicated on the page. In fact, huge amounts of knowledge were totally left out. Therefore, he began his chapter in a completely different manner, incorporating an idea found in paragraph three of his first draft into paragraph one of his revision.

> Permeating all elements of society is the classic theme that man is finite. The ability to accept his finiteness is a premier consideration for continued growth. Denial of one's finiteness is a reflection of the lack of wholeness that exists with the individual. It is not until an individual realizes his lack of permanence that he can fully accept his life and his position

> within the scope of time and space. This struggle surfaces in many different facets, but the message is always the fear of not being. If then, in the helping relationship, the helpee is struggling with the theme of 'being,' how can the helper facilitate if he, himself has not resolved the issue within himself?

Paragraph two became a much more interesting presentation of the material that had previously been stated in a repetitious, dull manner.

> The issue is often times not resolved because of society's view of death. In an extensive review of the literature, Mueller (1976:145) pointed out that American society is characterized by death denial and fear of death. The implications of society's view of death become more pronounced when viewed in terms of the individual, for it is the individual who must ultimately face the problem. Dumont and Foss (1972:3) suggested that "attitudes toward our individual deaths then effect not only the way we view death, but also the way in which we live our lives." Because death affects lives on both conscious and unconscious levels, death education is important in order to help each individual confront this universal (Feifel, 1963:66).

Notice that in these revisions the student varies his sentence structure, does not overuse the same verbs, and uses left- as well as right-branching sentences.

This student was by no means the worst writer we had, nor the only one to improve so greatly. Rather, he was typical of the students who came to the Writing Center to receive assistance in achieving a more mature, effective style of writing. Our method of improving the quality of these students' writing is successful because it not only identifies the writers' problems but also provides a means of solving them. Sentence analysis gives the students an objective means of looking at their own writing, and sentence combining gives them the means of improving it.

APPENDIX A: SENTENCE-ANALYSIS CHART OF INTRODUCTORY SENTENCE ELEMENTS

Sentence #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Totals
1. subject																					
2. adjective-subject																					
3. adverb																					
4. prepositional phrase																					
5. participial phrase (pres.)																					
participial phrase (past)																					
6. dependent adverbial clause																					
7. noun clause as subject																					
8. infinitive as subject																					
9. gerund as subject																					
10. nominative absolute																					
11. direct object																					
12. predicate adjective																					
13. there (postponed subject)																					
it (postponed subject)																					
14. coordinating conjunction																					
15. transition word																					

APPENDIX B: INTRODUCTORY SENTENCE ELEMENTS

Sentence variety is an important element of writing style. While there are infinite possibilities for variation in writing sentences, the way in which you begin your sentences determines to a great extent how repetitious and dull or how varied and interesting your writing is. The elements listed below are all possible introductory elements.

First read through the list, looking closely at each example. If you are not familiar with any of the elements listed and cannot figure them out by studying the examples that are given, please ask one of the tutors to explain the construction (or constructions) to you. Then, using the Sentence Analysis Chart of Introductory Sentence Elements, analyze a piece of your own writing (e.g., a theme, a chapter from a thesis or dissertation, a proposal, etc.) to determine how many of these elements you have used. If you find that your sentences lack variety in the way they begin, rewrite those sentences, this time using some varied introductory elements.

1. subject
   The artist is of no importance; only what he creates is important since there is nothing new to be said. (William Faulkner)
2. adjective-subject
   A great block of ice got settled in my belly and kept melting there all day long, while I taught my classes algebra. (James Baldwin)
3. adverb
   Sometimes he would go through old games that he had already played. (Penelope Gilliatt)
4. prepositional phrase
   On the pleasant shore off the French Riviera, about halfway between Marseilles and the Italian border stands a large, proud, rose-colored hotel. (F. Scott Fitzgerald)
5. participial phrase (present and past)
   Playing a recording of Prokofieff's "Classical Symphony" in the gallery, she spoke about England. (*The New Yorker*)
   Faced with increasing pressure from the outside world and with growing concerns in their own country, South Africa's universities are struggling with the question of how they should proceed. (*Chronicle of Higher Education*)
6. dependent adverbial clause
   Although they lived in style, they felt always an anxiety in the house. (D.H. Lawrence)
7. noun clause as subject
   That the rich are powerful is a fable. (*The New Yorker*)
8. infinitive (or infinitive phrase) as subject
   To be articulate and discriminating about ordinary affairs and information is the mark of an educated man. (Marshall McLuhan)
9. gerund (or gerund phrase) as subject
   Stealing watermelons on dark and rainy nights was a pious duty when I was a boy. (Donald Day)

10. nominative absolute (participial phrase with its own subject)
    The desk ordered, pencils sharpened, paper blank, he was ready for a day of combat with the English language. (Donald Hall)
11. direct object
    A certain ugly bird she particularly likes. (*The New Yorker*)
12. predicate adjective
    So true is this that when the concept is withdrawn, or when it is forced into competition with another concept, the human being suffers. (Richard M. Weaver)
13. there or it (postponed subject)
    There is, however, an important part of reality that is quite inaccessible to the formative influence of language: that is the realm of so-called "inner experience," the life of feeling and emotion. (Susanne Langer)
    It was a face that fascinated me. (Ralph Ellison)
14. coordinating conjunction
    But to the citizens of this prairie town and to the people who would naturally stop there, Pat Scully had performed a feat. (Stephen Crane)
15. transition
    Moreover, melodies tend to ingrain themselves in the listener's mind. (Aldous Huxley)

A Note on Punctuation:

While some variation in punctuation is possible with several of the introductory elements listed above, the following rules and suggestions for punctuation should prove helpful:

1. An introductory element that functions as the subject of the sentence requires no punctuation (e.g., noun clauses, infinitives or infinitive phrases, gerunds or gerund phrases).
2. Only very long introductory prepositional phrases are followed by a comma unless one is needed to prevent misreading.
3. Introductory participial phrases (present and past), dependent adverbial clauses, and nominative absolutes are *always* followed by a comma
4. Transition words of more than one syllable are usually followed by a comma.

SENTENCES: THE FOCAL POINTS OF ENGLISH TEACHING

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I have taught and learned about writing in many different settings. Most of my experience has been with eighth-grade students, but I have taught high-school students, I teach undergraduates, I train K-12 teachers to teach writing to students, I have worked on newspapers and, recently, I took a course in short-story writing. No matter the age and kind of student and no matter the philosophy or experience of the teacher, one idea threatens both creativity and craft. That idea is this: once writing is down in a book or down on paper, it cannot be changed, except perhaps for spelling, usage, or punctuation. Most people believe that once a sentence is written down, it cannot be played with, experimented with, or speculated about in order to learn something. Somehow, that writing is carved into marble or that writing exists on a piece of paper only useful for being crumpled into a missile.

Sentence combining can help the teacher overcome this notion, which blocks not only creativity and craft but comprehension as well. Through sentence combining and related techniques, sentences become focal points through which many curricular light beams can be passed. Indeed, light from individual students may be passed through these focal points. Moreover, because the writing tasks are short, the rewriting need not be onerous, need not be some sadistic Hollywood version of Zen Buddhist repetition. Finally, not only are sentences generally considered the basic unit of syntax but the study of them fits within the time frames we have in most schools, a problem now being exacerbated by budget cuts and increasing class sizes.

For example, this year I started with oral interpretation, to teach poetry and to prepare my students for oral proofreading. A hobgoblin of oral interpretation is the student pausing at the end of a line instead of observing punctuation. To help overcome this, I used a very simple form of rewriting: students recasted the poem's sentences into the linear or graphic form used in prose. Instead of the usual fifteen students out of twenty-five line-stopping, five did. Further, as a check on comprehension, and as an introduction to the idea that what is on the page represents only one option selected by the writer, students were asked to move phrases around without changing the meaning of the poem. When options are explored, appreciation of the poet's choice can be enhanced.

David Atmian's "Iguanas," which is in the revised *Counterpoint in Literature* (Scott, Foresman and Company), ends in the following way:

> On cautious feet I silently approach
> To see their rainbow beauty lying heaped
> So carelessly,
> When, like an iridescent sigh they disappear,
> Leaving a flash of azure,

Green and purple
Over the stones and in the quivering air.

Students can discuss and speculate about the effectiveness of the stanza if they rewrite to begin with the infinitive "To see" and end with "they disappear." The chronological effect was the most obvious to my eighth-grade students.

In the same *Counterpoint* anthology, Coffin's "The Secret Heart" appears. If the poem is used later in the year, the effects of the passive transformation can be explored; for example, what happens to "Across the years he could recall/His father one way best of all" when it is changed to "Across the years his father could be recalled by him one way best of all"? Further, a form of combining will aid comprehension of lines nine and ten:

He held his palms each side the spark
His love had kindled in the dark.

To clarify the plain sense of these lines, the students were asked to insert various structure words to make a sentence that would mean the same thing; here, the word "that" fills this requirement. Moreover, since younger people have trouble comprehending nominals, sentences with noun clauses are rewritten, as in lines thirteen and fourteen of "The Secret Heart":

He wore, it seemed to his small son,
A bare heart in his hidden one.
to
It seemed to his small son that he wore a
bare heart on his hidden one.
or
It seemed to his small son that a bare heart
was worn by him on his hidden one.

This focus on the syntax helps students comprehend the figurative language of the lines, also.

By manipulating syntactic units, students not only grapple with reading comprehension and poetic appreciation but also begin to see that writing involves choices. This introduction attacks the "carved-in-marble" myth. However, I must advise teachers to be patient, and to be sure that these techniques are applied by the students in writing and reading of interest to them. As Sara W. Lundsteen counsels, in *Children Learn to Communicate* (Prentice-Hall, pp. 46-9), students need time to gain control of concepts; as Timothy E. Moore indicates in "Linguistic Intuitions of Twelve Year-Olds" (1975), linguistic competence is not complete or stable by the age of twelve. Apparent regression and disappointment are facts of my life. Yet, my experiences with undergraduates compel me to persist.

For example, in the English 104 class, we use the Norton *Introduction to Literature*, which includes the poem "The Heavy Bear Who Goes With Me" by Delmore Schwartz. It can be argued that the long sentences, the compounded verbs, and the chaining of appositives reinforce the havoc caused by "the bear." In our English 103, the composition course, our texts discuss, and perhaps exercise, balanced sentences or periodic sentences. In American literature courses, the sentence style of Twain, Stein, and

Hemingway is mentioned. Finally, modern concerns about literature might lead us at least to mention to our undergraduates John C. Gardner's *On Moral Fiction* (Basic Books), where revision is viewed as a test of a writer's moral stance.

After trying to communicate with stone-faced undergraduates, typical and adult, I have found that all of this is meaningless, or at least vague, unless students realize that sentences can be changed, that choices can be made and explored. If they have the "carved-in-marble" notion about what is written, students will evaluate a work on the basis of a first reading or a critic's claim. Using sentences as focal points helps to develop a sense or a means of exploration needed to handle more complex reading and writing tasks.

As this sense or means is being developed by me with younger students, I can teach other matters of literature. In *Counterpoints*, "The Parsley Garden" by Saroyan appears. Through sentence writing, students can contrast their shoplifting experiences with the protagonist's, or they can write dialogue for other scenes, or they can explore the syntax of the protagonist's mother. However, if the teacher's concern is symbolism, sentence combining can aid the comprehension of the garden as a symbol through an exercise like the following:

Instruction: Combine with *after:*
Al drank and ate at the parsley garden.
Al had been humiliated at the store.
Instruction: Combine with *before:*
Al drank and ate at the parsley garden.
Al told his mother what had happened and what he *thought* of doing after he was turned loose.

This exercise, along with discussion, emphasizes the garden's importance through its place in the action. It emphasizes that it is important to Al. Of course, student proposals to combine all three sentences help the lesson. The final step is connecting the garden and the mother.

When I began using grammatical combining in 1969, I used my own sentences or those from grammar books, traditional or linguistic. However, for grammatical combining, and later for non-grammatical, I found that using sentences by professional writers gave me more options, as well as more authority to my claims about writing. (By the way, it took me a long time to learn to design formats that were as clear as possible to students; even I, the "teacher" of pronouns, underestimated the confusion brought about by using the author's pronoun instead of the noun for combinations based upon stories not familiar to the students. *Who* and *what* are very important to people, especially young people. I will show some combinations that need to be revised or accompanied by some narrative.) Professional examples add steam to the assault on the "carved-in-marble" idea and on simplistic notions on plain style, which many laymen equate with kernel sentences and words that tell without showing.

In fact, while increasing the student's repertoire of sentence types, one can demonstrate lessons about vivacity, about good writing showing and not telling, or about good writing presenting evidence as well as judgments;

Cornelius Ryan's *A Bridge Too Far* (Popular Library) provides a good example:

MAIN: The British wounded looked fierce.
ADD: Their eyes were red-rimmed and deep-sunk. (+ BECAUSE)
ADD: Their eyes peered out of drawn and muddy faces. (+ AS)

The judgment of "fierce" is backed by evidence. Also, without directions demanding terminal, initial, or medial placement, various options are taken by students. Further, students of all ages see that their plain style has a way to go in order to be plain.

At the sentence level, I can demonstrate a character's quality being shown by actions with an example from Michael Crichton's *The Terminal Man* (Bantam Books):

MAIN: Benson was excited.
ADD: He was smoking a cigarette. (T/PART, term.)
ADD: He was making stabbing gestures with the lighted end. (T/PART, term.)
ADD: He spoke. (T/AD.CL., time)

Not only does using bestsellers stimulate reading but it also forces reconsideration of the "carved-in-marble" idea and simplistic notions about plain style. As one of my high-school students remarked: "Even the sentences in bestsellers use all the positions."

To grow as writers, students must apply these combining techniques to their own language to express their own thoughts through the written dialect. Like Ryan and Crichton, they can expand main clauses having judgment words with clauses and phrases having evidence words. Over the year, a student should constantly apply rewrite directions that are as few in number as possible, and one such direction could emphasize clear diction. For example, this year in a book report about *Treasure Island*, a student rewrote as follows, according to a direction for her:

"... how one person has power over ..."
to
"... how one pirate has control over ..."

With a sentence-combining exercise, a teacher can use sentences as a way of testing understanding of a theme or an issue, or as a way of introducing a theme or an issue. To do this, a teacher can have the students explore a combined sentence in terms of its propositions, as demonstrated by Robert P. Stockwell in *Foundations of Syntactic Theory* (Prentice-Hall) or in terms of how it encodes socio-linguistic data about a person's role. From *Last Stand at Papago Wells* by Louis L'Amour (Fawcett Gold Medal Books), one could use the following combination:

MAIN: Cates impressed Kimbrough.
ADD: Cates was just a boy. (+ ALTHOUGH)
ADD: Cates handled his rifle in a casual but sure way. (+ BECAUSE)
(Pronominalization is up to the students.)

This sentence raises the issue of attaining manhood through use of the gun or through violence. Why is it that many boy protagonists attain maturity by killing something, even a creature they love? Finally, what proposition about a boy's ability to impress is within (presupposed by) the concessive adverb clause? These various beams of light focus around the activity of combining a sentence in various ways.

In the context of a whole English curriculum with a strong literature component, sentence combining does at least double duty, always a desirable feature of an English lesson. Moreover, with the current linguistic emphasis on propositional approaches to language analysis, with our traditional concern with logic and comprehension, and with traditional questions that help us not only to analyze news articles but also to parse sentences, we might explore complementing sentence combining with work in rephrasing sentences to expose propositions. It seems reasonable that this could refine our discussion methods based upon semantics, as well as help reading comprehension, propaganda analysis, and logical development. By rephrasing sentences, we could avoid technical terms yet use the signals in the sentences as surface forms of the underlying propositions.

The above idea about formal language analysis through rephrasing or expanding sentences to expose propositions leads me to describe another reward I have gained from sentence combining. While combining, students often produce sentences that allow discussion of formal grammar. In fact, I suspect that the "carved-in-marble" myth is helped by grammar books, traditional and linguistic, since they give the impression that all is known or settled about language. Students are amazed to find out that a "truth" about syntax or grammar can be challenged or even discussed. Elaine Chaika in "Grammars and Teaching" (1978) discusses how a transformational grammar can be used to explain why sentences are or are not grammatical. On the basis of my experiencing blank looks and long pauses and revisions that are simply handwriting exercises, this approach, even a traditional approach, would be more powerful if students arrived with the idea that sentences can be changed and that langauge can be discussed, explored, or even debated.

One evening in a remedial composition course at Mercy College, I used the following combination, based on *The Passions of the Mind* by Irving Stone (Signet Books):

MAIN: They moved up the trail vigorously.
ADD: Their slim young bodies were in rhythmic cadence. (Delete WERE, term.)
(Pronoun-to-noun revision is needed.)
Expected: They moved up the trail vigorously, their slim young bodies in rhythmic cadence.
Discussed: They moved their slim young bodies vigorously up the trail in rhythmic cadence.

Are there issues of case grammar here?

Last year, eighth-grade students and I discussed the following combination, based upon Mina Lewiton Simon's *Is Anyone Here?* (Atheneum):

MAIN: No one is here except (FOUR OBJECTS)
ADD: A digger-wasp is burrowing. (Delete IS)
ADD: A wolf-spider is hurrying. (Delete IS)
ADD: A lun-ant is scurrying. (Delete IS)
ADD: A pine lizard is watchfully staring. (Delete IS)

Expected: No one is here except a digger-wasp burrowing, a wolf-spider hurrying, a lun-ant scurrying, and a pine lizard watchfully staring.

Discussed: No one is here except a digger-wasp, a wolf-spider, a lun-ant, and a pine lizard, burrowing, hurrying, scurrying, and watchfully staring.

Do the participles associate with their headwords? If so, why? Can the headwords and participles be reversed in the "discussed" sentence? There were no final answers, although I suspect that I should revise and ADD sentences to something like: "A digger-wasp that is burrowing is here." However, questions about sentences and style away from a combining or composition context went from zero to two or three per week by different people.

During the processes of writing and rewriting, the author balances personal insight with the audience's experience. How the author keeps in balance can be assessed through the resulting sentences. Just as the author walks this tightrope through revising sentences, the student writer must learn this lesson. Finally, as the persons assigned the task of teaching writing, we teachers must learn to balance personal and institutional time frames, to balance the excitement of brainstorms with the need to craft writing, to balance our egos with the need to revise methods, and to balance student interests and needs with curriculum matters. I have discovered and I hope I have demonstrated that using sentences as focal points can help us all achieve some balance, that sentence combining can help us show students that learning and growth can be aided by revising and exploring language.

OUT OF THE SCHOOLROOM: SENTENCE COMBINING IN TRAINING PROGRAMS FOR BUSINESS, INDUSTRY, AND GOVERNMENT

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An astonishing amount of formal instruction takes place outside of the schoolroom. One source estimates that, in 1975, business, industry, and government spent more than $100 billion on instructional programs for their employees (Gilbert 1976). The purpose of most of these programs is to train employees in practical skills that they can use on the job, now or in the near future. The range of the skills taught is incredible, including everything from operating a cash register to using the latest computer technology to design and operate nuclear power plants. Among the skills that command considerable attention — and funding — is writing.

For the most part, courses designed to improve the practical writing skills of employees are pedagogically conservative. Employers who sponsor the courses refuse to try many of the recently developed methods for teaching writing in schools and colleges. For example, at least as far as I know, employers have never even experimented with such methods as writing without teachers, apparently because these methods seem to be designed to teach writing skills that are quite different from the skills required to write effectively on the job. However, employers are likely to give sentence combining a chance to show that it can increase the ability of employees to write well at work. In this paper, I will attempt to:

> —Explain why employers are likely to try sentence combining even though they will not experiment with so many other teaching methods.
>
> —Suggest ways to adapt sentence-combining instruction to the special needs of employee writing courses.

Why Employers Will Try Sentence Combining

An explanation of why sentence combining will probably be tried in employee writing courses must begin by pointing out that employers will *not* be favorably impressed by the research that initially recommended sentence combining to teachers in schools and colleges. Employers will *not* be favorably impressed by research that demonstrates how efficiently sentence combining can increase the syntactic maturity of writers. In fact, employers will view any effort to increase syntactic maturity as so outrageously impractical that many of them will refuse to consider the other reasons for using sentence combining in their employee writing courses.

Opposition to Increasing Syntactic Maturity

Why are employers opposed to increasing the syntactic maturity of their employees? According to current definitions, writers increase their syntactic maturity by learning how to write more words per clause, more words per T-unit, and more clauses per T-unit. To employers, that means that the writers

are learning to write more words per sentence — and longer sentences are something that employers have been working for decades to teach their employees to avoid.

The opposition to teaching employees to write longer sentences is epitomized by an outburst at a recent sentence-combining workshop. Among the participants was the chief editor for a large federal agency. When the participants were asked to combine several kernel sentences, this chief editor became so incensed that she blurted out, "A long sentence containing all those ideas is exactly what I want my people to learn *not* to write." Significantly, this editor is responsible for arranging training courses for her department. Like her, almost all those who plan employee training courses believe that when it comes to sentences, shorter is better.

This belief in the desirability of short sentences is especially strong because it is based upon something much more substantial than intuition or conventional wisdom. It is based upon a body of research that dwarfs the amount of work done on sentence combining. The objective of this research, called readability research, is to find formulae that will predict the ease with which a given passage can be read. The most serviceable of these formulae was proposed by Rudolf Flesch (1948):

$$\text{Reading Ease} = 206.835 - .846wl - 1.015sl$$

where wl = number of syllables per 100 words
sl = average number of words per sentence

According to this formula and its many imitators, when sentences (and words) get longer, reading ease declines.

The limitations of these formulae are obvious, even to those involved with readability research. For example, Thomas E. Curran (1976) points out that the formulae can lead to a simplistic approach to writing that ignores such important qualities as comprehensibility and usability. Suspicious of a method based only on word-length and sentence-length, many researchers have sought diligently for more sophisticated methods of predicting reading ease. The United States government alone has spent millions of dollars over the past thirty years to find a formula that would predict reading ease more accurately than Flesch's without requiring substantially more complicated procedures. No such formula has yet been found, and the validity of Flesch's approach has been verified again and again.

The results of this readability research have been received much differently by business, industry, and government than they have by schools and colleges. Schools and colleges have tried to ignore them; business, industry, and government have tried to use them. After all, as Curran points out, although readability cannot ensure comprehensibility or usability, both comprehensibility and usability require readability.

Furthermore, readability formulae have proven their usefulness. For decades, consultants like Flesch have been preaching the gospel of shorter words and shorter sentences in writing courses for employees. And these courses have been effective enough in improving employee writing skills so that employers keep inviting the consultants back. The U.S. Army has found readability formulae so useful that it now specifies that technical manuals

written by outside contractors must achieve a certain readability score (Department of Defense Manuals 1975: 11-12, 27-28). If the manuals do not achieve that score, they are not accepted — and they are not paid for.

Business, industry, and government's long and satisfactory experience with readability formulae will make them skeptical — to say the least — of a teaching method like sentence combining that is recommended to them on the basis of its ability to train writers to use more words per clause, more words per T-unit, and more clauses per T-unit.

Attraction to the Practical Method of Sentence Combining

If sentence combining's ability to increase syntactic maturity will not attract the interest of employers, what aspect of it will? The chief attraction will be sentence combining's *method*, a method that on the face of it seems so eminently practical.

The method seems practical for two reasons. First, it attempts to teach authors about writing by having them practice their writing rather than by having them study grammar and grammatical errors. Second, in the writing practice it requires, sentence combining asks writers to explore alternative ways of expressing a set of ideas and then to select the one alternative that will work most effectively in a given situation. This kind of writing practice promises to give employers the practical results they want from employee writing courses: not the ability to write longer clauses or T-units but the ability to say more clearly and effectively what needs to be said.

Because employers want to increase the clarity and effectiveness rather than the syntactic maturity of their employees' writing, they will be particularly impressed by the results of one part of the sentence-combining experiment conducted by Morenberg, Daiker, and Kerek (1978). Those results show that sentence combining is a very efficient method of increasing the overall quality of a writer's work when overall quality is determined by the holistic ratings of impartial evaluators. To those employers who object that in the Daiker, Kerek, and Morenberg experiment, writing quality seems to be synonymous with longer clauses and T-units, it would be appropriate to point out that the experiment did not establish an inevitable connection between writing quality and syntactic maturity. The experiment suggested, of course, a connection between the two for at least one group of writers: freshman students in a certain kind of university. However, that connection probably exists for only certain writers. There are almost certainly other writers who can improve their writing by composing shorter clauses and shorter T-units. Employers believe that their employees are such writers — and the success with which readability formulae have been used in business, industry, and government seems to support that belief. Sentence combining's method, however, is indifferent to matters of shorter and longer: it is concerned with less effective and more effective. By helping writers explore and then select wisely from among alternative ways of expressing a given set of ideas, sentence combining can work just as well with writers who bloat their sentences as it does with writers who undernourish them.

Thus, as sentence combining stands before the world of work, asking to be tried in employee writing courses, it will have one count against it and one

count for it. The count against it will be its perceived tendency to teach authors to write longer sentences. The one count for it will be its eminently practical method, a method that has demonstrated its ability to improve the overall writing ability of authors. I believe that the appeal of the practical method will win out over the opposition to increasing syntactic maturity; but those who first explain sentence combining to business, industry, and government must realize that employers will probably not believe that they can improve their employees' writing ability by teaching them to write more words per clause, more words per T-unit, and more clauses per T-unit.

How to Adapt Sentence Combining to Employee Writing Courses

If sentence combining is given a trial by employers, it will be given just that and no more. No matter how much research may be offered to demonstrate sentence combining's ability to work in an academic setting, employers will not accept sentence combining until it has demonstrated its effectiveness in the much different setting of the world of work. Are there any measures that instructors can take to increase the chances that sentence combining will succeed in this new setting? I think so, and I devote the second part of my paper to discussing them.

In particular, I suggest that instructors adapt the sentence-combining material developed for schools and colleges to the special needs of employee writing courses by taking the following measures:

1. Limiting the objectives of the instruction, at least in some cases.
2. Selecting carefully the material to be introduced in the courses.
3. Using examples and exercises directly related to the writing done on the job by the employees enrolled in the courses.

Limiting Objectives

Most instruction in sentence combining pursues four distinct objectives:

1. To introduce the general principles and procedures of sentence combining in a way that will do the following:
   A. Make writers aware of the great variety of syntactic structures with which they are familiar.
   B. Enable writers to see that they can express a given set of ideas in a variety of ways, some of which are rhetorically more effective than others.
2. To increase the variety of syntactic structures that writers actually use when writing or revising.
3. To develop the writers' ability to use sentence combining to correct problems of compositon.
4. To hone the writers' ability to select from a group of alternatives the most effective way of expressing a particular set of ideas.

The first of the four objectives can be achieved very quickly; in an hour or less an instructor can introduce the general principles and procedures of sen-

tence combining. However, instructors need much more time to pursue the other three objectives, because the other three require so much practice on the part of writers. For example, writers need practice to increase the variety of syntactic structures that they actually use because only practice will make them confident enough of their mastery to use the new forms when an opportunity arises. Writers need even more practice in order to develop their sensitivity to the subtleties of expression that will enable them to select from several alternatives the most effective way of saying something.

Unfortunately, such practice requires more class and homework time than can be found in many employee writing courses. These courses usually have fewer instructional hours than do courses in schools and colleges. Furthermore, most devote only a small portion of their hours to sentences. And the courses usually provide very little opportunity for homework, because in the working world instructional hours are usually consolidated into large blocks. Thus, a course might consist of a series of long sessions (three or four hours) spread over a few weeks, or the course might even consist of a few consecutive days of intensive study.

In some cases, instructors may be able to increase the time provided for homework — if not for classwork — by wresting work on sentences from its traditional place in employee writing courses. A syllabus designed with that intention for a corporate research center is shown in Figure 1. The course consists of nine three-hour sessions. Usually in such a course, the work on sentences would be herded into one, perhaps two, sessions at the very beginning or the very end of the course. Instead, in the course shown in Figure 1, the work on sentences is broken up into smaller units of forty-five minutes apiece; these units constitute the final portion of each of the nine lessons. The syllabus shown in Figure 1 substantially increases the number of homework assignments in sentence combining without greatly increasing the proportion of class time that employee writing courses usually devote to work on sentences.

Such a syllabus is not always possible, however. Many instructors will be faced with unalterably limited amounts of time that can be devoted to classwork and homework on sentences. In such situations, some instructors may be tempted to pursue all four objectives anyway. However, they will be wiser to set modest, achievable goals — when necessary — rather than to pursue objectives that they cannot attain.

Figure 1.
Syllabus designed to provide an opportunity for considerable homework in sentence combining. (This course was created for Monsanto Research Corporation by Paul V. Anderson).

COURSE SYLLABUS

TOPICS

Session	Designing Documents (135 minutes per session)	Writing Sentences (45 minutes per session)
1	Understanding the Purpose of Your Writing	Combining Propositions Into Sentences

2	Determining the Audience and Basic Design of Your Documents	Using Relative Clauses
3	Designing the Executive Component of Your Documents	Achieving Directness
4	Designing the Supporting Component of Your Documents	Using Coordination
5	Preparing Tables, Illustrations, and Bibliographic Citations	Using Subordination
6	Writing Your First Drafts	Using Participles
7	Working on Group Writing Projects	Using Noun Substitutes
8	Writing Your Second Drafts	Editing Sentences to Fit Their Context
9	Summary and Examination	Summary and Examination

Selecting Material

Besides limiting (when necessary) their objectives, instructors can adapt sentence-combining instruction to the special needs of employee writing courses by carefully selecting the material they introduce to their classes. For example, when explaining the principles and procedures of sentence combining, instructors will want to tailor their material to the particular group of employees they are addressing. Employees with advanced degrees will be interested by theoretical issues that will try the patience and goodwill of employees without a college education. Older employees who went to school when grammar was regularly taught in English classes will be reassured by grammatical terms and concepts that will confuse younger employees who have not been taught traditional grammar.

Instructors who have time to work with specific syntactic structures and problems should also keep in mind the needs of their students when selecting the structures and problems to be studied. For example, employees who write primarily upon technical and scientific subjects have relatively little use for absolute constructions (e.g., "The chamber will be fully chilled, *its temperature – 230°C.*"), although their writing may benefit greatly from the use of noun substitutes (e.g., "*Turning off the switch* can ruin the experiment."). On the other hand, absolutes might be very useful to individuals working in public relations or advertising. Similarly, employees in one field may have greater need to study a specific syntactic problem than do employees in other fields. For example, those writing about scientific and technical subjects are often afflicted by a tendency to stack large numbers of modifiers in front of their headwords, as in the following phrase: "an integrated order entry, trim scheduling, roll finishing and labelling, car loading, shipment planning, and inventory control system." This problem of stacking modifiers is not nearly so troublesome to those who do not write on scientific and technical subjects. Thus, by carefully selecting their material, instructors can greatly enhance the effectiveness and usefulness of their course to the particular group of employees who are studying with them.

Using Job-Related Examples and Exercises

Regardless of the material they select and regardless of the objectives they decide to pursue in their sentence-combining instruction, instructors should see that most, if not all, of their examples and exercises are directly related to the writing done on the job by the employees studying with them. If the employees are asked to work with materials that are not related to their jobs, they may question — may even resist — the claim that the skills they are being taught can apply to the kind of writing they must do at work. For that reason, the examples and exercises included in existing sentence-combining textbooks are unsuited for employee writing programs. At work, employees simply do not write in the same way as students are encouraged to write in the high-school and college composition courses for which these books are designed. To obtain examples and exercises that are appropriate for employee writing courses, instructors must create their own.

When creating examples and exercises, instructors should strive to make them realistic in terms of three variables:

—Subject
—Form
—Purpose

Accordingly, when selecting subjects, instructors should turn to the kinds of facts, equipment, and affairs with which their students regularly deal at work. For example, when selecting the subjects for samples and exercises used in courses for computer manufacturers, they should deal with central processing units and inputs, while they should turn to headboxes and coatings when preparing courses for paper mills. Similarly, when they design long exercises, instructors should use memoranda, letters, and proposals, rather than impressionistic essays and term papers. Finally, instructors should design both short and long examples and exercises that have the same kinds of purposes as do the documents prepared by their students on the job. Thus, these examples and exercises should aim to report a problem, to propose a solution, to get someone hired or fired, to placate a disgruntled customer, to persuade a hard-headed boss to authorize an expenditure or a certain course of action — to do, in short, the kinds of things that the employees' on-the-job writing is designed to do. This realism of purpose is particularly important in courses where the instructors are trying to hone the employees' ability to choose the best from among many ways of saying something. To choose the best means to choose the most effective, and the most effective can be selected only when the desired effect, the purpose, is known. Only by working with examples and exercises that have realistic purposes can instructors give employees realistic practice in making desirable rhetorical choices.

When seeking materials from which to construct examples and exercises that are realistic in subject, form, and purpose, instructors can usually get assistance from the organizations sponsoring their courses. Such organizations are usually willing to open their files to instructors. Although rarely will these files toss up materials that exactly suit the instructors' needs, the files will provide ideas, phrases, sentences, and even whole paragraphs that can be shaped to meet the pedagogical objectives of a writing course.

Let me add, however, that instructors who can devote a considerable amount of time to sentence combining should not reject the aid of the very helpful explanatory material in Daiker, Kerek, and Morenberg's *The Writer's Options* (1979). In such situations, instructors would be perfectly justified in assigning chapters from the textbook while substituting job-related exercises for the academic exercises provided in the textbook. By ensuring that at least a major portion of their examples and exercise material is directly related to the writing done on the job by their students, instructors will greatly enhance the effectiveness of their work on sentence combining.

Conclusion

Sentence combining will almost surely be given a chance to demonstrate that it can work effectively in employee writing courses. Despite its apparent tendency to make authors write longer sentences (which is something employers do not want their employees to do), sentence combining is such an eminently practical method of teaching writing that employers will probably not be able to ignore it in the way that they have ignored many other techniques for teaching writing. When sentence combining is tried by employers, its success will depend largely upon the skill with which instructors adapt sentence-combining materials developed for use in schools and colleges to the special needs of employee writing programs. Three adaptations seem particularly important:

1. Limiting objectives, when there is too little time to pursue them all.
2. Selecting carefully the material to be introduced to the class.
3. Using examples and exercises that are realistic in subject, form, and purpose.

If instructors make these three adaptations, sentence combining will most likely find an additional home outside of the schoolroom — in the $100-billion world of employee writing programs.

TOWARDS TEACHING THE LOGIC OF SENTENCE CONNECTION

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Compositions often return to students with red comments in the margins reading "logic," "trans," or "transition," indicating the teacher's perception of unclear movement from one idea to another.[1] But all too often, though perfectly correct, the marginal comments fail to teach. They reflect the teacher's intuitions, but do not necessarily communicate the tacit knowledge behind them. An important objective of composition theory is to convert such good linguistic intuitions into explicit linguistic descriptions which can be communicated to students. In this paper, I will offer an understanding of the process of sentence "chaining" — the semantic means of logically connecting sentences to produce coherent discourse — and present a sentence-connectives chart with some suggestions for sentence-combining exercises designed to increase the student's awareness of sentence connectives and their use.

Before proceeding with the main discussion, a brief glance at some reasons for the student transition problems is in order. The main source of difficulties for the beginning writer lies with differences between conversation, the universal means of communication, and writing. In both speaking and writing, the actual use of overt transitional markings is rather infrequent, requiring the listener or reader to infer intended logical connections between ideas. But, whereas the ordinary speaker is quite successful in leading his listener to draw the right inferences, as a beginning writer he may not always be so successful with his reader. There are at least four reasons for this. First, conversation is interruptable. The listener can, and often does, interrupt to get a point clarified or to assure the speaker that he understands. But a reader cannot interrupt. A writer must therefore compensate by becoming his own interlocutor, himself predicting confusion or vagueness, and then adjusting to ensure clarity. Second, speaking admits of intonational and gesticulatory clues to transition which are absent in writing. A writer must also compensate for this lack, a task the beginning writer is often unaware of. Third, writing, especially expository writing, is impersonal in comparison with conversation, requiring much more explicit, less enthymemic reasoning than he is accustomed to exercising conversationally with friends and acquaintances. And finally, a lesser point, the connective words or phrases of highly educated prose, though logically no different from connectives of ordinary speech, may be unfamiliar to the pen of the beginning writer.

There is nothing in all this to suggest that the beginning writer lacks any logical concepts or has deep communication deficiencies. On the contrary, he is highly successful at conversational tasks but simply unaware of and unpracticed in the peculiar demands of writing. The teacher's challenge, then, is to help students become as adept at communicating transition in writing as in speech. In accord with a concept familiar to exponents of sentence combining, we begin by assuming that students possess the requisite concepts for creating cohesive discourse. We need only to provide ways to elevate the student's tacit knowledge to a more conscious level, permitting him to make conscious choices appropriate to the writing context.

This goal can be accomplished by presenting cohesion in two stages, the first dealing with the fact of sentence connectedness and the range of sentence connection types, and the second dealing with the "anaphoric" nature of the sentence-chaining process itself.

First, connectedness and the range of connections. In an important article on cohesion and composition, Winterowd (1970) proposed that all T-units and larger discourse units, from sentence to paragraph and beyond, are chained together by certain overtly and covertly expressed semantic relationships, such as "causativity," "conclusivity," "coordination," and "obversativity." Thus, the two discrete sentences in (1) become a coherent discourse only when a connective idea is posited to chain the sentences together.

(1) a. Harry ate all the cupcakes.
b. He was hungry.

For example, a reader might assume that b. is a stated *cause* for a. Or, the reader might assume that b. is a *conclusion* based on a. In either case, it is the linkage of the two sentences which gives unitary meaning to two otherwise disjointed sentences. The idea that all sentences in a discourse are semantically chained together is a basic premise for the remainder of this discussion.

Winterowd also postulates a very limited set of connective types, namely, the seven[2] in (2):

(2) Coordination, sequentiality, obversativity, causativity, conclusivity, alternativity and inclusivity.

However, I believe that for pedagogical reasons at least, limiting the connective types so drastically is premature. Consider for just a moment Winterowd's category, "obversativity." This is far from a clearly uniform category. In fact, it seems to subsume at least three distinct though related types — what I call "opposition," "concessive opposition," and "contrast" — as exemplified in (3), (4), and (5), respectively.

(3) a. John is not a liar.
b. Rather, he's a very honest, respectable person.
(4) a. The tortoise is slow.
b. Nevertheless, it always reaches its most ambitious destination.
(5) a. Gordo gulps his food voraciously.
b. His sister Zinka, on the other hand, is the epitome of refined etiquette.

Note that the transitional elements, "rather," "nevertheless," and "on the other hand," cannot replace each other felicitously, and this shows the different purposes of each. In (3), the proposition of the b. sentence is meant to deny and replace the proposition of the a. sentence. In (4), b. concedes a., denying and replacing an implication stemming from it. And in (5), the b. sentence neither denies nor replaces the proposition of a. or any implication of it, but adds a statement which is contrary to an implication of a. (Notice that only in (5) is it possible, without unusual intonational changes, to replace the transitional element with 'and' and retain the original meaning.)

Classifying these three different types of sentence relationships under one

rubric thus obscures some important semantic differences. Until the interrelationships of transitional elements are better understood, it would seem best to present a student with the widest range of connective types possible in a manner accessible to him, along with exercises which will increase his awareness of sentence connectedness.

Toward this end, I have included a Sentence-Connectives Chart and set of illustrative sentences (composed with my colleague, Tom Klinger), which will lend themselves to appropriate exercises. The chart, meant as a progress report to invite discussion, shows a wide range of connective types, most of which are likely to be familiar, but all of which can be understood quite easily from the actual connective expressions listed under each category.

A major premise of the chart, mentioned earlier, is that all T-units, sentences, paragraphs and even larger units in a discourse are semantically chained together by relationships such as those under the heading CONNECTION TYPES in the chart. If the categories in the chart were absolutely correct, the semantic ties between any discourse units would necessarily be drawn from this list. (Actually, at least one connection type has been purposely omitted because it is a different sort and is not well understood, namely, the topic-comment relationship of questions and their answers.)

Concerning the categories, I have not tried to spell out their similarities except to indicate certain clusterings by the placement of horizontal lines on the chart. Also, perusal of the chart will show occurrences of particular connectives repeated in various categories. The fact that "and," for example, occurs rather frequently is not cause for alarm; the chart is descriptively not prescriptively oriented and should therefore serve as a source for understanding what exists. The important point, justifying the categories, is that no set of connectives under one category totally duplicates the connectives under any other category.

To the right of each connection type is a partial listing of actual connectives for the overt expression of the type, those in the rightmost column, shown with initial capital letters, representing cross-sentence connection, those in the middle column representing within-sentence connection. Across sentences there is a consistent way of associating a connection type with a pair of sentences (or other discourse units). Except for the conditional type, the meaning of a connection type shows how the second sentence of a pair relates semantically to the first. If the connecton is one of Contrast, it is the second sentence that is in contrast with the first. The same systematic relationship obtains for clause and phrase coordination; the second clause or phrase carries the specific meaning of the connection type in relation to the first. The case with syntactic subordination is more complex; sometimes the subordinate clause will carry the semantic weight of the connection type, sometimes the main clause — in direct relationship to whether the second sentence of the uncombined pair becomes the subordinate or main clause of the combined result, a point that I will not elaborate on further here but that may be better understood through the sentence combining discussion below.

The usual method for teaching connectives is to have the student intuit or infer a connection type based on covert cases. However, I suggest the opposite tack. Since the difficulties of interpreting covert connection can be considerable, I suggest that the student be introduced first to ample cases of overt con-

SENTENCE-CONNECTIVES CHART		
CONNECTION TYPES	WITHIN-SENTENCE CONNECTIVES (Coordinators and subordinators)	ACROSS—SENTENCE CONNECTIVES ("adverbial conjuncts")
ADDITION	and	And, Also, Further, Furthermore, In addition, Moreover
SIMULTANEOUS STATE or EVENT	and, as, when, while, during	Meanwhile, At the same time, Simultaneously
SEQUENTIAL POSITION	and, and then, before, after, once, when, as soon as	First, Then, And then, Thereupon, Next, Finally, Earlier, Previously
ENUMERATIVE POSITION	—	First, Second, Secondly, In the second place, Last, Finally
ILLUSTRATION	such as, like, namely	For example, For instance, To illustrate
RESTATEMENT	since, as	In other words, That is, Again, Thus
EXPANSION	—	In fact, Indeed
CONTRAST	and, but, yet, only, though, although, whereas, while	In contrast, At the same time, But, However, On the other hand
CONCESSIVE OPPOSITION	but, yet, only, though, although, whereas, while	Even so, At the same time, In spite of this, For all this, Nevertheless
CONCESSION	—	To be sure, Admittedly
OPPOSITION	but	On the contrary, Rather, Instead
CAUSE and REASON	for, because, since, in that	After all, For
EFFECT (RESULT)	and, so, so that	As a result, Consequently, Therefore, Hence, Thus, Accordingly, So
CONCLUSION	so, so that	Consequently, Therefore, Hence, Thus, Accordingly, So
SUMMATION	—	In conclusion, To sum up, All in all, On the whole, In brief
PURPOSE	so, so that, to, in order that, in order to	For this purpose, To this end, To do this
DIGRESSION	—	Incidentally, By the way — To return
CHOICE	or, either . . . or, nor, and neither	Or, Otherwise
COMPARISON	and, and . . . too, just as	Likewise, Similarly, Too
	-er than, more than	—
	as if, as though	—
CONDITIONAL	and, if . . . then	—
	when, in case, whenever, unless	Otherwise

nection, using connectives from the chart, as exemplified in the illustrative examples accompanying the chart. Showing case after case of overt connection will visually demonstrate the point that sentences in a discourse are semantically connected or connectable. Once these connections are digested, the student can be led to discover that explicit connectives can often be omitted with equal sense to the discourse. (This gives sense to the idea that semantic connections exist when they are not overtly expressed and shows the grounds for ambiguity and vagueness in the interpretation of covert cases.) The idea that something is left out or crossed out because it can be retrieved easily seems a positive basis for teaching, making the "unobtrusive" use of transitional devices a matter of artistry.

Let me illustrate how a sentence sequence with overt connectives, such as the sequences in the appended illustrative examples, might be used to familiarize the student with sentence connection. If we begin with the sequence in (6),

(6) a. Harry lost his balance.
b. As a result, he tripped down the stairwell.

the obvious first point to discuss is that the event in (6b) is being presented as the effect of the event described in (6a). A useful next step would be to contrast the connective expression "as a result" with other contradictory types; substituting connectives such as "for example," "in contrast," or "nevertheless" will produce obviously inappropriate and often comical results. Such substiutions can be made that will preserve the sense of the original, such as "so," "consequently," "accordingly," and others, demonstrating the flexibility of connectives and possibly the relative feeling of formality associated with different items.

Further awareness of sentence connection will come from exercises manipulating the original sentences to answer such questions as, can the sentences be combined using a within-sentence connective and maintain the original meaning, can the cross-sentence connective be omitted, can the within-sentence connective be eliminated in favor of a different construction? Answering such questions for the given sentence will produce such results as the following: combining with a connective will give (7) or (8), depending on whether a subordination or coordination pattern is chosen:

(7) Harry lost his balance and tripped down the stairwell.
(8) Because he lost his balance, Harry tripped down the stairwell.

Omission of the connective, absolutizing, and reducing will give (9):

(9) * Losing his balance, Harry tripped down the stairwell.

It can be noted that the order of the sentences can be reversed, from cause-effect to effect-cause, with consequent ease of omitting the sentence connective, giving (10):

(10) Harry tripped down the stairwell. He lost his balance.

Such sentence play, using the appended illustrative examples or similar sentence pairs, should prove useful in alerting the student to the existence of sentence connecton in both its overt and covert applications. Such exercises might then be followed up with the reverse exercise of guessing what connection type is intended in cases where no overt one is present — in contrived texts, selected passages, or student writing.

Once the student is aware of sentence connectedness and the range of connectives, the second stage of understanding cohesion may be broached — also through sentence combining. Most cross-sentence connections are anaphoric, that is, relate back to preceding discourse in pronominal fashion. It is this phenomenon, in my opinion, that actually accounts for the chaining effect of discourse. Let me illustrate with (11), a version of an earlier example of a Concessive Opposition:

(11) a. The tortoise is slow.
b. Still, it always gets to its destination.

The connective "still," and cross-sentence connectives in general, can be "translated" or replaced by an expression containing a demonstrative pronoun. "Still" means the same as "but, in spite of this," as do other connectives in the Concessive Opposition class; "in contrast" means the same as "in contrast to this"; "simultaneously" means the same as "simultaneous with this," and so on. I am not proposing that we tell students that the longer form is better, but I am proposing that a complete understanding of connectives involves understanding how the chaining of sentences is accomplished. It is much easier to teach a student to omit deadwood than to insert necessary material he only vaguely understands.

Once "still" is translated into "but, in spite of this" to give (12),

(12) The tortoise is slow. But in spite of this, he always gets to his destination.

(showing the demonstrative pronoun), an obvious second step of translation emerges that can be accomplished by sentence combining. Following from the fact that such demonstrative pronouns will, in general, refer to preceding portions of the discourse, such as to the previous sentence or series of sentences, the demonstrative in the given example will refer back to the preceding sentence, "The tortoise is slow." Once the antecedent has been established, a nominalized version of it can replace the demonstrative pronoun, preserving the meaning of the original sequence. In replacing the demonstrative, the antecedent sentence itself should be left intact. The resulting product, either (13) or (14), shows the full significance of sentence chaining:

(13) The tortoise is slow. But, in spite of the fact that the tortoise is slow, he always gets to his destination.
(14) The tortoise is slow. But, in spite of the tortoise's being slow, he always gets to his destination.

For a second example, the same process applied to (6), a cause-effect sentence, would give (15) by expansion of the connective, and (16) by replacing the resulting demonstrative with a nominalized version of the antecedent sentence.

(15) Harry lost his balance. As a result of this, he tripped down the stairwell.

(16) Harry lost his balance. As a result of losing his balance, he tripped down the stairwell.

This use of sentence combining demonstrates the nature of chaining in discourse. Furthermore, the products of such exercises are not altogether unfamiliar, since similar repetitious passages do crop up in student writing. By this method we can show the student where all the repetition comes from, what its purpose is, namely to link-chain the discourse, and how, by reverse reasoning, such repetition can be reduced without consequent loss of meaning. The desirability of such reduction can then be explained on the grounds that it is preferable to let the mind do its automatic work of interpreting meaning, rather than force it to go through something consciously that it can handle more easily unconsciously. The presence of otherwise unnecessary material is a signal of its importance, calling for conscious attention. If the mind can infer the meaning easily, with automatically coherent results, and if the writer does not intend to call attention to the material, then the reduced forms are preferable.

Another benefit of this method is that it uncomplicates the problem of vague reference to propositions. It makes the problem one of chaining. If the student cannot pull out some portion of the preceding discourse with which to replace his demonstrative pronoun, he has vague reference.

Finally, as suggested in Winterowd (1970), and as implied in D'Angelo (1977), the benefits of this approach can be integrated into a whole approach to rhetoric. The sentence-connection types presented in the chart can be seen as rhetorical topics for exposition. Let me close with one illustration of how this could be so. As stated, the connectives are generally anaphoric, a point that is crucial for understanding the structure of paragraphs. Consider the simple paragraph in (17):

(17) a. The tortoise is slow.
b. It doesn't seem to have a great deal of energy.
c. You would expect it to give up a trek that was arduous.
d. Yet, the tortoise always makes its destination, no matter how ambitious the journey.
e. He has remarkable endurance, is extremely persistent, and is untiring.

The basic topic is Concessive Opposition, focusing on the conjunct "yet." The centrality of this relationship can be discerned by the double translation process outlined above, which will reveal the *scope* of the reference in "yet." First, "yet" means "but, in spite of this." Next, and most important, the question arises, what does "this" refer to? A correct reading of the paragraph requires the understanding that all the preceding sentences (17a) through (17c) form the antecedent, as if sentence (17d) read as in (18):

(18) But, in spite of the fact that the tortoise is slow, doesn't seem to have a great deal of energy, and you would expect it to give up a trek that was arduous,

the tortoise always makes its destination, no matter
how ambitious the journey.

The last sentence in the paragraph, (17e), gives the cause for the tortoise's unexpected abilities.

To conclude, this brief discussion offers a means for thinking about connectives and provides concrete guidelines for creating sentence-combining exercises which will teach sentence connection. For the student newly alerted to connectives by the proposed methods, corrective comments in the margins of his essay indicating unclear transition gain a new character; they are transformed from a right-versus-wrong analysis to an instruction for clarifying an intended logical connection — or for establishing one, in the first place.

NOTES

[1]I would like to acknowledge the very helpful input of frequent conversations on coherence and related composition matters with Zev Bar-Lev and members of the Pilot Composition Staff at The University of Akron, especially Bruce Holland and Tom Klingler. My thanks, also, to Gerry Levin and Doug Butturff for the stylistic comments on an earlier draft.

[2]Winterowd revised the number to six in the introduction to a republication of the original article in 1975: 225.

EXAMPLES ILLUSTRATING THE RELATIONSHIP BETWEEN WITHIN-SENTENCE AND ACROSS-SENTENCE CONNECTIVES

ADDITION

I have a headache. In addition, I have a sore throat.
I have a headache, and I have a sore throat.

SIMULTANEOUS STATE OR EVENT

Mirta is singing a most intricate Spanish ballad. Simultaneously, she is accompanying herself masterfully on the guitar.
Mirta is singing a most intricate Spanish ballad while accompanying herself masterfully on the guitar.

SEQUENTIAL POSITION

The prof gave out extra thick exam booklets. Next, he gave extensive instructions.
After the prof gave out extra thick exam booklets, he gave extensive instructions.

ILLUSTRATION

Our camping trip degenerated into one fiasco after another. For example, one time the front tire of the camper slipped off the edge of Sharp Drop Pass.
Our camping trip degenerated into one fiasco after another, such as the time the front tire of the camper slipped off the edge of Sharp Drop Pass.

RESTATEMENT

A transformation is a linguistic rule. That is, it captures linguistically significant generalizations about word order in a language.
A transformation is a linguistic rule, as it captures linguistically significant generalizations about word order in a language.

CONTRAST

John gulps his food voraciously. But his sister, Zelda, is the epitome of etiquette.

While John gulps his food voraciously, his sister, Zelda, is the epitome of etiquette.

CONCESSIVE OPPOSITION

The tortoise is very slow. Still, it always gets to its destination.

Although the tortoise is very slow, it always gets to its destination.

OPPOSITION

John's not a liar. On the contrary, he's a very honest person.

John's not a liar, but a very honest person.

CAUSE/REASON

Gregoriana should win the interscholastic political-science debates. After all, she is a naturally powerful orator.

Gregoriana should win the interscholastic political-science debates because she is a naturally powerful orator.

EFFECT (RESULT)

Mick lost control of his car. As a result, he smashed into a telephone pole.

Mick lost control of his car and smashed into a telephone pole.

CONCLUSION

Socrates died. Hence, he was a man.

Socrates died, so he was a man.

PURPOSE

Milt just bought a new Oldsmobile Cutlass, really loaded. To do this, he saved all the money from his second job for three years.

Milt saved all the money from his second job for three years to buy his new, really loaded, Oldsmobile Cutlass.

CHOICE

John is a real genius. Or, he is a clever cheater.

John is either a real genius, or he is a clever cheater.

COMPARISON

A scientist seeks to find new connections between physical things. Similarly, a philosopher seeks to find new connections among ideas.

A scientist seeks to find new connections between physical things, just as a philosopher seeks to find new connections among ideas.

CONDITIONAL

Pick up your cash prize by noon. Otherwise, it will be sent back to the bank.

If you don't pick up your cash prize by noon, it will be sent back to the bank.

THE ROLE OF OLD AND NEW INFORMATION IN SENTENCE COMBINING

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Research and work in sentence combining have answered a number of our questions concerning its effectiveness in the classroom. We have seen our students from elementary to college level create various shapes and combinations of sentences with an amazing degree of proficiency. A number of questions, however, still remain unanswered. My own students, as well as teachers in workshops and conferences, often pose the questions: Why do we select one kernel sentence as matrix and one as insert? When we do choose and even all agree on the "right" one? What are the criteria we use to judge the better solution?

Initial answers to the questions are apparent in some cases. The major idea is often the one contained in the matrix kernel and the minor or subordinate idea in the insert sentences. Or it may be a matter of logic as when the sentences

A. John has an unusual dialect.
B. John comes from northern New Hampshire.

are combined to become

1. Because John comes from northern New Hampshire, he has an unusual dialect.

Other times, as will be demonstrated, the answers do not appear to be a matter simply of major idea or logic alone. In looking for other possible answers, I read a variety of recent studies in case grammar and pragmatics[1] and found a number of possible reasons for the preference of one type of combination over another. Underlying each of the reasons was a single concept concerned with the establishing of a certain relationship between writer and reader. This concept is based on the theory that some information is placed in a position to signal that it is shared or given information, in other words "old" information. Other information in the sentence is placed in a position of "new" or unshared information.

Grammarians have long recognized this binary structure of the sentence but only in more recent times has the semantic rather than syntactic significance been closely studied. Linguists such as Fillmore (1968), Chafe (1976), Halliday (1970), and Nilsen and Nilsen (1975) have pointed out the general tendency in English to let the old or shared information come early in the sentence and the new or unshared information come later. This concept of information processing that considers the role of both writer and reader provides a productive link from the work of such linguists to the use of sentence combining in our classrooms. As sentence-combining research and use become more mature, the need becomes more evident for integrating this powerful tool into the larger framework of the total composing process.

From the readings in pragmatics and related studies, I have found that a number of the reasons for preferring one combination over another can be

grouped under five purposes: 1) sharing experience with the audience, 2) creating a certain consciousness in the audience, 3) revealing the empathy of the writer, 4) establishing a distance between author and audience, and 5) placing complex material at the end of the sentence. Although these five purposes, as will be evident, are often overlapping or concomitant, they provide one basis for both writer and reader to judge the effectiveness of the sentence combining.

Five Purposes for Focusing on Old and New Information

I. *Sharing Experience With the Audience.*

In the two kernel or basic sentences

A. The woman is Dr. Sternglass.
B. The woman is walking across the street.

there are a number of outcomes, including the following two combinations:

1. The woman who is walking across the street is Dr. Sternglass.
2. Dr. Sternglass is the woman who is walking across the street.

In the oral mode, as contrasted to the above written mode, the new information can be signaled by placing the primary stress on any number of words including *woman*, *Dr. Sternglass*, and *who*. In the written text the presence of old information is often signaled by its positioning at the beginning of the sentence. Thus, in the first combination above, the writer is sending the message that the "woman who is walking across the street" is the old, shared, given information while the rest of the sentence "is Dr. Sternglass" is the new information. In the second sentence, "Dr. Sternglass" is the information that is old and shared while "is the woman who is walking across the street" is the new information.

In an attempt to have my students become more aware of their decisions concerning old- and new-information processing, I often ask them to underline the old information twice to indicate it is shared, and the new information only once. The graphics appear to help them apply the criteria:

1. The woman who is walking across the street is Dr. Sternglass.
2. Dr. Sternglass is the woman who is walking across the street.

This positioning of information to signal whether it is old or new is directly related to the rhetorical context. One of the main maxims contained in Young, Becker, and Pike's respected text *Rhetoric: Discovery and Change* (1970) is "Change between people can occur only over a body of shared features." The authors stress that the writer must realize what experience he or she and the audience share. Aware of these features, the writer must actively use them to expand, clarify, or replace features of the reader's image of the world with the writer's desired images. This process of informing or persuad-

ing the reader begins in the initial stages of sentence combining. Decisions made here, based on an awareness of the options and their effects, are among the most important ones the writer must make.

The placing of information into new and old slots, however, turns out to be more complex than it initially appears. Don and Alleen Nilsen in *Semantic Theory: A Linguistic Perspective* (1975) point out that effective authors, debaters, politicians or scholars very carefully balance the old and new information in their sentences. This balance is not primarily on the basis of what they know to be old and new information for the audience, but rather on the basis of the communicative effect they wish to achieve. The Nilsens pose such examples as the following for analysis:

A. This car is for sale.
B. The car is magnificent.

become

1. This magnificent car is for sale.

A. My opponent did not appear for the debate.
B. My opponent is a leftist.

become

1. My leftist opponent did not appear for the debate.

A. The support for public education in New Hampshire is a problem.
B. The support is decreasing.

become

1. The decreasing support for public education in N.H. is a problem.

The above is what the Nilsens call the "deviant" subject in that the author is assuming joint knowledge which may in fact not be present. The early part of the sentence such as "The magnificent car" is not necessarily shared or agreed upon information, nor would either "My leftist opponent" or "The decreasing support" fall in this category of old, shared information. This is not, the Nilsens emphasize, to say that such sentences are ineffective; they exist and they are not rare. Our students, indeed any writer or reader, should constantly be aware of the effect of such packaging of old and new information.

II. *Creating Consciousness in the Audience*

This second purpose underlying the choices made in sentence combining is closely related to the previous motive, the sharing of experience. Wallace Chafe (1976) points out that the difference between new and old information in some cases is the result of the speaker or writer's assessment of what is in the consciousness of the audience at the particular point of time. For example, in combining the following two sentences

A. Your sister was in town yesterday.
B. I saw your sister.

we might produce

1. I saw your sister in town yesterday.

In this case what the writer believed to be already in the mind of the audience is placed in the information slot. While the audience very well *knows* the "sister," the writer is introducing her into the audience's mind at this point. The rhetorical focus is achieved by placing "sister" in the new information position.

The dynamics of such focusing can work in interestingly different but related ways. For example:

A. We broke your window.
B. We were playing with our football.

could result in a number of combinations including:

1. We broke your window with our football.
2. Our football broke your window.
3. Your window was broken by our football.
4. Your window got broken.
5. The window broke.

Here we have the agent, then instrument, then object as subject focus. It appears that while "we," "football," and "window" are in the old rather than new information position, they are nevertheless playing the role of focusing the audience's attention. One linguist, Frederick Bowers (1971), has called the above particular process of shifting focus the "paradigm of increasing irresponsibility." It is a common strategy in situations entailing blame. For example, "The toast burned." "The Royal Crown Derby china slipped from my hand."

III. *Revealing the Empathy of the Writer*

In his recent studies of discourse analysis. William Rutherford (1976) suggests that one of the factors operating in the selection of what becomes the subject of a sentence is empathy. He states that a speaker will have a tendency to empathize more with himself than with the hearer, more with the subject than the object, more with what is presupposed or what has been given rather than what is new.

Upon seeing the picture of a Delta aircraft, my students often generate a couple of basic sentences, such as

A. Delta is ready.
B. I am ready.

with the possible outcomes of

1. Delta is ready when I am ready.
2. I am ready when Delta is ready.

We then discuss why they picked one of the basic sentences to be the matrix and one as the insert. We usually come to some consensus that in the first combination above, "Delta" is chosen to be the matrix because the desired focus is on "Delta." However, we all unanimously agreed that if we were sitting in the airport for four hours waiting for the plane to be repaired, we would choose the second combination. Our empathy is then with the "I" not

"Delta." The advertising executive that created the slogan "Delta is ready when you are" probably reveals his true attachments more than he realizes.

IV. *Establishing a Distance Between Author and Audience*

We are more aware of this fourth cause when we examine the stylistic techniques of professional writers of fiction. For example:

A. A house was dark.
B. A house was dingy.

can be combined to produce

1. The house was dark and dingy.

or

2. The dark and dingy house.

Here the use of the definite article is the key in signaling what is an identifiable and shared quality of the house. It is a technique many authors use in order to start "in medias res," asking their readers to agree to partake in the experience in the role of an acquaintance.

A more sophisticated example is found when the following sentences are combined:

A. We lived in a house in a village.
B. The village looked across the river.
C. The village looked across the plain to the mountains.
D. We lived there in the late summer of that year.

to produce:

1. In the late summer of that year we lived in a house in a village that looked across the river and plain to the mountains.

Here Hemingway has placed a great deal of information in the shared position and intensifies this with the use of the definite article "the." We must agree, if we are to effectively engage in the reading, to join the writer in the shared experience. The "new" information placed in the "old" position has the effect of bringing the reader closer to the writer.

The Hemingway sentence, like the Delta sentences, raises the question of the effect of adverbial movement and left and right branching of the embedded (insert) sentences. How much do these transformations influence the signaling of old and new information and the focusing of audience attention? The two outcomes of the basic Delta sentences might well have been:

1. When Delta is ready, I am ready.
2. When I am ready, Delta is ready.

Does such positioning tend to qualify the old information, in a sense preparing the entrance of focused information?

In using sentence combining as a prereading activity, Marilyn Sternglass (1978), touches on a matter closely related to the purpose of distancing. For example, she presents the following kernel sentences:

A. My father died.
B. He died on July 29th.
C. He died in 1943.

with the possible output:

1. On the 29th of July, in 1943, my father died.

The subject focus of the given information is "My father died." The left branching of the inserts tends to activate our categories of time. Sternglass has found that in the second set of basic sentences

A. His last child was born on the same day.
B. His last child was born a few hours later.

students are quick to produce, sometimes without full realization:

1. On the same day, a few hours later, his last child was born.

After a number of these exercises, the students are fully conscious of James Baldwin's deliberate strategy in closing the distance with the reader by the temporal left-branching introduction to the main focus.

We can see how packaging information into the old-information slot may result in closing the gap between writer and audience. We might also see where a writer could overshare here. In packing too much information that the reader does not share or even comprehend, the writer can create a widening of the intellectual and social distance between author and audience. The Nilsens give an example of increasing the gap between writer and audience in the sentence that results from combining

A. Empiricism is replacing introspection.
B. Empiricism exists in the history of thought.
C. Introspection exists in the history of thought.
D. SOMETHING is the concern of his lecture.

into

1. The replacement of empiricism for introspection in the history of thought is the main concern of his lecture.

Here, as the Nilsens point out, the author apparently expects the audience to know whatever information is placed in the subject part of the sentence. If the audience is unfamiliar with the information, it might get the feeling of being inferior to, or being "put down" by, the writer.

Packing too much information in the subject, or old-information, component of the sentence can have the effect of establishing a superior or presumptuous attitude. On the other hand, placing too much new information in the predicate component of the sentence can have the opposite effect. For example, during a presentation on the effects of drugs given to an urban high-school group, the speaker stated that "The use of drugs over an extended period could result in possible damage to the brain as well as negative effects on the reproduction system." The audience in this case could very well sense a condescending attitude on the speaker's part, as the positioning of information

well known to them is placed in the new-information slot. The communicative success of a sentence-combiner, therefore, depends to a large extent on the skill in which he or she judges the proportion of old and new information for each sentence.

V. *Placing Complex Material at End of Sentence*

The fifth and last reason is what Randolph Quirk (1972), calls the establishing of end weight. He discusses the tendency to put "complex" constructions last in the sentence. This is often quite compatible with new information, in that what is complex in the sentence is also likely to be new information. For example, in combining the following sentences

A. A large garden was in front of the house.
B. My father had planted flowers in the garden.
C. These flowers were roses and tulips.

the result might be

1. In the front of the house was a large garden where my father had planted a lot of flowers, including roses and tulips.

Here the complex information is placed in the new-information slot while the less complex is fronted.

William Rutherford (1976) supplies another example of the principle of complex material being placed in the new information position.

A. Kinesiology has a useful purpose.
B. We learn how to analyze the movements of the human body.
C. We study the human body.

The last two sentences may be combined in a number of different ways including the two following combinations:

1. In order to learn how to analyze the movements of the human body, we study it.
2. We study it in order to learn how to analyze the movements of the human body.

In the above examples a principle of discourse automatically explains a fact of sentence combining. Generally speaking, pronouns and other elements that have antecedents make for weak ending of sentences. By definition, Rutherford concludes, such an element can not represent new information, and thus will usually not occur at the end of a sentence.

In summary, then, we have seen that there are a number of purposes underlying the selection and positioning of old and new information. All of these reasons for focusing information have one basic concept in common, that is, an awareness of audience. Helping our students become more sensitive to their audiences, and to some of the principles underlying these decisions should result in more effective sentence combining. It should do this specifically by helping the writer to achieve a proper balance of attention given to all three rhetorical concerns, namely, subject, purpose, and audience.

It can also help the writer to evaluate his or her decisions and the potential effect on the reader. The effective sentence-combiner can have as one of his or her goals the striving for a balance of old and new information in keeping with the desired communicative effect on the reader.

NOTES

[1]In addition to the references cited below, see Bates 1976, Booth 1975, Davis 1976, Hirsch 1977, Odell 1977, Oim 1977, and Olson 1977.

DOING SENTENCE COMBINING: SOME PRACTICAL HINTS

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What I'd like to talk about today is common sense — particularly common sense in the teaching of writing. I've chosen this angle for three reasons: first, because it's a relatively uncommon one for someone who works in teacher education — as many of us are painfully aware; second, because common sense provides a context for some thoughts about sentence combining, the latest miracle cure in English teaching; and, third, because common sense needs affirming right now. This, after all, is a time of legislatively mandated competencies, and many of us seem increasingly confused about whether the *human* basics are still worth doing.

Let me say at the outset that the thrust of this talk is *not* that I'm okay as a writing teacher and you're so-so. I'm simply asking you to check what I'm saying against your day-to-day experience. Obviously, just because a person wears a beard and lives in Mormon Country does not mean that he lays claim to Divinely Inspired Right Answers. (Of course, it does help when his speech is written on gold tablets and hand-carried by the Angel Moroni, as this one was.) Still, though, you'll have to decide for yourself whether what follows has the feel of sense — or nonsense.

So much for preliminaries. Let's now get to the serious stuff — some common-sense basics about writing instruction, with particular reference to a technique called sentence combining. I'd like to make two related points and discuss their classroom implications with you.

I

Point Number One is this: *Since writing is a putting-together process — not one of taking apart — most students need more practice in building sentences and paragraphs than in analyzing and labeling their parts.* To me, this principle is absolutely basic. And here's why.

Think for a moment about what happens when you write. In a purely psychomotor sense, you're stringing words one-after-another-in-space, usually left to right across a page. That's the physical happening, the observable and behavioral event of transcribing. But of course something else is also going on at the same time. You're inventing a discourse structure. Perhaps it's a love note, perhaps a talk like this one, perhaps something else. Whatever it is, words are giving form or structure to a mental happening. In fact, words are what cause this cerebral happening to happen.

So the act of writing — in both the physical sense of transcribing as well as the mental sense of composing — is basically a putting-together experience, not an analytic one. Of course, we're all aware that analytic skills often lie *behind* writing — as, for example, when you pause to consider where your essay's going, what to use as an example, or how to restructure a phrase to achieve more emphasis. But the writing itself — the stringing of words, the creating of a discourse structure that mirrors a mental happening — is an additive or synthesizing kind of thing.

Now what does all of this have to do with sentence combining? Just this: Sentence combining gives kids practice *building* sentences and paragraphs

instead of tearing them apart. It's an embarrassingly simple, common-sense pedagogy that asks them to transform clusters of kernel sentences into more complex, elaborated structures. In other words, it's making longer sentences out of short ones. It's making *choices* from a finite set of stylistic alternatives.

And how is this done? By teaching parts of speech? By diagramming? By studying transformational rules? Emphatically *no* on all counts. It's done simply by asking students to use their built-in transforming power, the incredible repertoire of syntax skills already programmed into their skulls. They flex their linguistic muscles in the context of writing rather than speech. And in so doing they're stringing words one-after-another-in-space as well as participating in the creation of descriptive, narrative, expository, and argumentative paragraphs. They learn writing from the "inside out," so to speak.

So, to summarize, the focus of sentence combining is really on *doing* writing. It's skill-building work that doesn't require the pre-teaching of grammatical nomenclature. Of course, if students *already* know something about sentence structure and how paragraphs hang together, common terminology can often come in handy. My point, though, is that success with this approach does *not* depend on one's ability to label predicate adjectives or draw sentence diagrams or use similar analytic skills. As we're all aware, there's an abundance of research indicating how profoundly futile and non-productive such work is. But even more to the point is sentence-combining research. It shows clearly that *doing* is what counts and that students do not have to know classroom grammar to profit from putting sentences together.

Well, how effective *is* this practice of sentence combining? Does common sense, when put into classroom action, really make sense?

Quickly summarized, the research highlights are these: First, there are at least eight studies indicating that sentence combining increases syntactic fluency or syntactic maturity. Second, there are four pieces of research documenting that sentence combining improves writing quality — as quality is perceived by experienced teachers. Third, there are two studies showing that significant gains in syntactic fluency are still present after eight weeks' time. Fourth, there are three research studies indicating that sentence combining works with freshman college students as well as with junior high and senior high youngsters. And, fifth, there are clear indications that students at all levels enjoy sentence combining — at least in comparison with other work in English classrooms.

Why this common-sense technique should produce such dramatic and exciting results is, I think, a fairly puzzling (but happy) problem for many of us. It's my hunch that combining works because it helps people to hold longer and longer stretches of discourse in their heads. I see this as a partly physiological, partly syntactic, and partly semantic phenomenon. It is physiological, I think, because it seems highly dependent on what I call "oral rehearsal" — the speech-to-writing transfer of power. It is grammatical, I think, because it seems to facilitate increasing depth of modification as well as T-unit and clause length. It is semantic, I think, because it invites people to "chunk" information into higher levels of abstraction via transformations.

What I am saying, in other words, is that sentence combining may work because it helps people hold more in their heads both structurally as well as

semantically. I am not suggesting that it improves *what* they think but rather how they are *able* to think. That, anyhow, is what the research evidence (including that on reading comprehension) is beginning to suggest to me. And that's why I'm increasingly convinced that the approach, simple and primitive as it is, may enhance not only writing skills but also cognitive development more than any of us even begin to suspect.

In a more practical sense, though, it's not too difficult to understand why sentence combining produces such dramatic results. Good skill teaching relies heavily on modeling practice. In other words, you show more than you tell. Your fingers are *on* the guitar strings or *in* the clay; your hands help mine to grip the racquet right. You ask me to pay attention, copy you, and try it on my own. You give me feedback and encouragement. And you invite me to keep practicing so that the skills are internalized and come easily.

Sentence combining is simply a form of modeling practice applied to writing. And, therefore, it's nothing more than a common-sense extension of what many of us have been doing all along — namely, helping kids muscle their way through sentences and connect them somehow to other ones. Such instruction centers first on the putting-together activity — stringing words, creating a discourse structure — and then long-distance analysis of what's been done. This subsequent talk about writing of course consists of usage work and revision at "higher" levels, those grammatical and rhetorical abstractions that you and I have studied and presume to teach. But to repeat: the *doing* occurs first. Talk about writing comes after the doing because then there's something to talk about. And practice — doing it on your own — comes after the classroom talk because then there's awareness of what the writing task really is.

So much for Point Number One.

II

Point Number Two is this: *If the amount that students write is limited by what you and I can read and correct, they'll not get enough practice to develop either real fluency or technical competence.* Again, this is a bottom-line basic, I think. Here's my reasoning in the form of a syllogism.

All skills take practice to acquire; writing is a complex set of skills; hence, writing skills — if they're to be gained and maintained — take lots of practice. Now, I am aware that such logic eludes some of the competency-testing people. Apparently, some believe that writing proficiency is a little like a vaccination shot: Once you've "gotten" it, you're forever immune from attacks of misplaced modifiers or other, more serious, maladies.

To me, such a view of language development is both naive and dangerous: naive because it ignores the non-linear ebb and flow of linguistic/cognitive growth; dangerous because it tends to subvert teaching that promotes such growth. The trap, needless to say, is that teaching to such tests can all too easily become an end in itself, if we're not alert to the danger. Clearly, competency tests are means, not ends. To regard them as otherwise demeans our common mission.

So *practice* is a common-sense condition for gaining and maintaining writing skills. The real *bind* comes when we accept this premise but also feel that we're guardians of the language, morally obliged to monitor every

scribble, mindless or otherwise, that our students chance to write down. Consider what such a commitment really means. For secondary teachers, a load of 150 students, each writing a mere 10 minutes, will generate 15,000 words per day or 75,000 words per week — and more than that once they get rolling. This doesn't count, incidentally, the American Legion essays or the creative work on "What a Daffodil Thinks of Spring." To respond critically to such an avalanche of words leaves little time for other basics — such as lesson planning or going to the bathroom.

Consider for contrast, what happens in typical *music* instruction. Your piano teacher shows you how, gives you some direction and encouragement, and sends you off for some practice on your own. It's the world's most straightforward, no-nonsense model of teaching, and it works if you do. Please note, however, that your piano teacher does not monitor your practice sessions. If we were to suggest such an idea to piano teachers, they would simply laugh. They would regard such over-the-shoulder monitoring as ineffective teaching and as a perversion of their role. And they would be right on both counts. Is it really any different for us as teachers of writing? I don't think so. Correcting and grading what are clearly practice efforts is not the best use of our time or talents.

This intense and moralistic fervor that many of us have for correction I call the Jonathan Edwards Syndrome — "Sinners in the Hands of an Angry Pedagogue." But please don't get me wrong. Personally, I have nothing against well-intentioned efforts to exorcise evil from student writing. Charlie's Angels fill one need, while Avenging Angels, like us, fill another. The problem comes with extremes — with those among us whose teacher training was apparently done under the Marquis de Sade. I just feel that *overzealous* efforts with the red pencil are counterproductive (because they don't work), perverse (because they promote widespread linguistic neurosis), and misguided (because there's a better way).

Enter, stage right, sentence combining to the rescue. One of the truly nice things about such exercises is that small groups of students can work together on them and that we, as teachers, don't have to pass judgment on whether each solution is "right" or "wrong." Focus comes as students compare write-outs to combining problems. Most students develop the idea very quickly that there are *multiple* right answers to open sentence-combining clusters. And they also discover that having their friends as reader-teachers can be pretty demanding.

In short, sentence-combining problems help turn a classroom into a writing laboratory. Students check their solutions against others that group members have written; they argue for one writeout over another; and they often modify their writing, either in terms of mechanics or style, to accommodate input from peers. So they get a few minutes practice in both writing and critical reading. And you get a chance to give help where it's really needed and/or re-organize the disaster area of your desk.

I should mention here, incidentally, that the payoffs are apparently the same whether one teaches the "signalled" format popularized by O'Hare or the "open" format that I've used. Research now supports the effectiveness of *both* approaches. You should know, too, that there are *other* materials on the market — Helen Mills's work, Phil DiStefano's, Susan Wittig's, Ann Oben-

chain's, for example — and the soon to be published books by Daiker, Kerek, and Morenberg and by Warren Combs. There may be others of which I'm not aware. And the future holds promise of new classroom materials with further innovations in format. We'll see a mixing of open and signalled exercises, I think; we'll see cloze combining exercises; we'll see de-combining and re-combining work; and we'll see an increasing emphasis on inter-sentence connections and paragraph linking. It's this last area which is my own particular interest because it uses sentence-combining as a vehicle to teach other things. But so much for commercials. Back to our regularly scheduled program.

A typical context for teaching writing mechanics — punctuation, capitalization, basic usage conventions — occurs whenever a teacher leads the total class in oral or written sentence combining. Inevitably, syntactic or transcribing mistakes are made as students stretch their linguistic resources. This is part of the process for all of us. In my view, problems with faulty parallelism or overembedded phrases or simple punctuation are *not* occasions for gnashing of teeth and self-righteous criticism of elementary teachers. I see them simply as natural opportunities for productive class instruction. "Let's work together on this one," you might say. "Who sees a problem here? How can the sentence be fixed?" Classroom attention is directed to real here-and-now writing problems, not on fill-in-the-blank exercises.

My experience has been that mechanics are often *easier* to teach through sentence-combining exercises than when the student's own free writing is involved. With free-writing critiques, I often bounce from mechanics to organization to questions of purpose; sooner or later, I find that kids get defensive about the *content* of their writing and can't hear what's being said about *mechanics*. With sentence-combining critiques, however, there's clear focus on mechanics, not content; students know that they're responsible for *how* something is written. Sometimes this increases their receptivity to my teaching.

A point that needs to be emphasized here, I think, is that while sentence combining needs to be done orally — students trying out their writeouts on one another — it's also important to make those writeouts *visual*. You can't *study* a spoken sentence. It evaporates. So students have to transcribe sentences onto transparencies, put them on the chalkboard, or somehow get them before one another. Then there's a basis for making comparisons between the effectiveness of various writeouts — and there's also a context for seeing how a given sentence relates to ones that precede and follow it. Without this visual referent, teaching is much more difficult, I think. Making sentences visual enables you to teach everything from the most nitty-gritty transcribing basics to nuances of word choice and tone.

All of which brings us to a restatement of Point Number Two: *The amount that students write cannot be limited by what you and I are physically able to read.* For them to develop real fluency and technical competence requires considerable practice. This is where sentence combining can help, of course; but it's *also* necessary to enlarge the responding audience for both skill-building and free writing. The breakthrough comes when we finally realize that not everything has to be graded. Then there's a chance not only for better instruction but for our survival as well.

III

Well, I've made the two points I promised, and I'm nervously reminded of the schoolboy's report on Socrates: "He talked a lot, and then they poisoned him." Let me therefore conclude with a parting remark or two about fads in English education — one of which, rather clearly, is this method called sentence combining.

What I have reference to, specifically, is our sometimes desperate need to be "with it." I think that most of you, in your heart of hearts, know what I'm talking about. One term we're deeply into media studies, then it's Christensen-style rhetoric, then literature of the occult, then transformational grammar, then prose models, then creative dramatics, then journal writing, then folklore, then science fiction, then Warriner's. And now it's sentence combining. A reality of English teaching is that someone is always admonishing us to try something "new." Unfortunately, dusty closets filled with "with-it" materials that are no longer "with it" are the legacy of off-the-wall approaches to curriculum decision-making.

Am I critical of innovation and experimentation in English teaching? Hardly. My point is that as inventors and consumers of curriculum materials we all ought to exercise common sense — to realize that no materials or approaches are likely to solve all our problems, or be "teacher-proof." In other words, if we're professionals in something more than an ironic sense of the word, our obligation is clearly to demand *reasons* from one another as well as ourselves for what we're doing. This is the kind of accountability that feels good. Why? Because it helps us to respect each other and ourselves.

Within this context, I'd therefore like to say what combining activities will *not* do for your English program. First, sentence combining will not massage the souls of your students into instant eloquence. Second, it will not infuse them with critical perception, humaneness, interpersonal sensitivity, or cosmic consciousness. Third, it will not teach them the difference between an ablative absolute and an abominable appositive. In brief, sentence combining will probably not reverse the decline in S.A.T. scores, cause massive overnight gains in reading comprehension, or cure hemorrhoids — either your students' or yours.

I stress the *limitations* of such exercises because I remember how mine were developed. You see, when I started my trial-and-error fooling around with combining activities in the late sixties, none of those aforementioned goals had even occurred to me. All I was asking myself was whether the idea of kernel sentences and transformations had any possible application to the realities of English teaching. That's all. Working alone out in the wild, windswept outback of eastern Idaho, I didn't even know the *name* of sentence combining, let alone its underpinnings in research done by men such as Kellogg Hunt, Roy O'Donnell, and John Mellon. The only professional I shared my ideas with was Francis Christensen — this during the summer of 1968. He was not exactly enthusiastic. Christensen liked me, I think, but he felt that combining exercises would teach what he regarded as bad writing. So I went stumbling ahead without much direction — other than some classroom field-testing and flickers of common sense.

What sentence combining can *perhaps* do I've already outlined. As a skill-

building adjunct to a writing program — not as an exclusive approach in and of itself — it can probably increase syntactic fluency, improve writing quality in some respects, and provide a context for work on practical mechanics. But, obviously, sentence combining in itself does not teach many basics of the composing process — one of which is cohesion between sentences, another of which is how to find something to say when you don't know what to say. I'm happy to report that forthcoming materials are *moving* in this direction; yet even these, when they're available, must be examined with a skeptical eye, I think. We owe it to our students. My hope is that we don't overdo our expectations for combining and then abandon it later because of unwarranted disillusionment. There are enough "black holes" in English teaching without this becoming another.

So common sense suggests that when all is said and done, it is people such as you and me who make the real difference in classrooms. Quality depends not so much on competency tests of "with it" curriculum fashions as upon what students are *doing* with our day-to-day support. The *human* basics are still what count. Or to put it another way:

I KNEW A TEACHER ONCE

I knew a teacher once
With words as soft
As moths on summer screens;
Brittle-bright and
Crisp was not his style.
As others barked,
His whispers touched the dark
Inside your skull
And seemed to echo there.
The way was sure.
He always took the time:
Refused the rush
Of world reports for poems
And pushed aside
The weight of dusty tomes
To scratch his nose
And pass around the mints.
He seemed alive.

You couldn't put him on.
He'd take a book
And make it yours and his
In magic ways
That made your breath come quick.
His wink was slight.
The eyes were bright and clear,
A hush of greens.
You'd watch the pause of smile.
A patient blink
That let the question hang.
His tease would make
You more than eyes and ears;
It often made
Your insides twist and think.
I guess he liked
His work enough to make
It play for us.

BIBLIOGRAPHY OF SENTENCE COMBINING AND THE TEACHING OF WRITING

This bibliography has a twofold purpose. On the one hand, it lists together all the references cited in the preceding papers, and thus provides a convenient one-stop reference source for the entire volume. On the other hand, it is intended to serve as a comprehensive, up-to-date bibliography of the theory and practice of sentence combining. Because of this second function, the bibliography includes items other than those referenced in the papers.

The bibliographical coverage of the published material on sentence combining is intended to be comprehensive. But we made no effort to do justice to either unpublished items, such as conference presentations or teaching materials with limited circulation, or sources concerned with measurements of syntactic maturity without direct implications for sentence combining.

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